

SONY[®]

Digital Wireless Transmitter

Operating Instructions

DWT-B01N

DWX **WiDIF-HP**
DIGITAL WIRELESS  Cross Remote

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Features

The DWT-B01N is a digital wireless transmitter for a UHF synthesized wireless microphone system to be used for broadcast or movie production purpose. This transmitter is suitable for Electronic News Gathering (ENG) and Electronic Field Production (EFP).

What is DWX?

DWX refers to Sony's new digital wireless microphone system. The DWX series reflects Sony's extensive expertise in professional microphones and sound design. It represents a successful blend of Sony know-how, wireless technology renowned for stability, and cutting-edge digital audio technology.

In addition to realizing the high sound quality possible with a digital system, the DWX series supports multi-channel simultaneous operation, encrypted transmission, and metadata transmission for monitoring the status of multiple transmitters. Using a main link and a separate additional link, remote control of transmitters from the receiver is also possible. With its many advanced features, the system has the potential to revolutionize the workflow of professional applications.

What is WiDIF-HP?

WiDIF-HP (WiDIF: Wireless Digital Interface Format, HP: High Profile) is a wireless digital audio interface format developed by Sony.

It enables highly secure transmission with high sound quality and low system latency, and supports simultaneous multi-channel operation.

What is Cross Remote?

Cross Remote is a system that allows transmitters to be monitored and controlled from a receiver and the Wireless Studio control software installed on a computer connected to the receiver.

For example, the settings of a transmitter worn under clothing can be easily changed over the wireless link.

Wide RF carrier frequency range

The DWT-B01N transmitter covers an extremely wide RF carrier frequency range. Depending on the model, the transmitter can cover bandwidths between 48-MHz and 72-MHz (e.g., 72-MHz with the CE4248 ¹⁾) — much wider than 24-MHz of the analog wireless microphone system. This remarkably wide coverage on a single model offers cost efficiency and operational convenience, because it allows one transmitter to be operated in many different areas.

¹⁾ Carrier frequencies differ depending on the model.

Compact, lightweight, and rugged design

The DWT-B01N is designed to be extremely compact and lightweight, essential qualities for use by artists in fast-moving TV and outdoor productions.

Switchable mic or line input level and adjustable attenuator

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

Three audio codec modes

Switch between audio codec modes based on your operational needs.

For details, see "Setting the audio codec mode (CODEC MODE)" on page 12.

Switchable RF output power

For details, see "Setting the RF output power (RF POWER)" on page 11 and "Setting the maximum RF output power (MAX RF POWER)" on page 12.

Power sleep mode

For details, see "Power save setting (POWER SAVE)" on page 11.

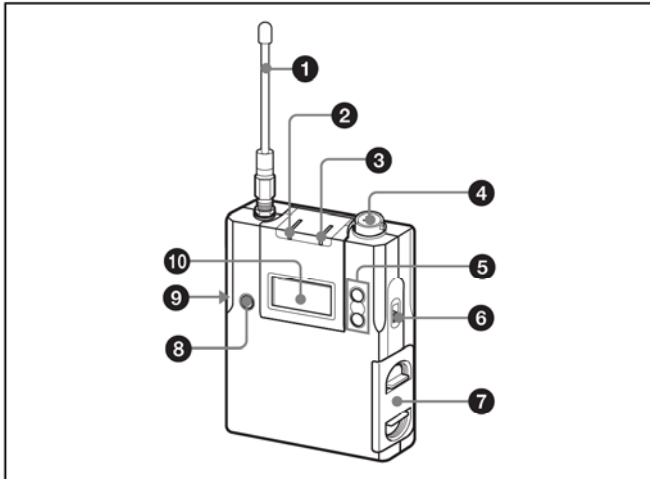
Digital low-cut filter

For details, see "Low-cut filter setting (LCF)" on page 11.

Easy-to-see, full dot-matrix OLED (Organic Light-Emitting Diode) Display

The quick response of the OLED display enables real-time operating conditions to be displayed clearly and accurately.

Parts Identification



1 Antenna

2 AF (audio input level) /PEAK indicator

Lights up green when the signal input is stronger than the reference level.

Lights up red when the signal input is 3 dB below the level at which distortion begins.

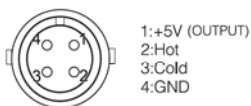
3 POWER indicator

Lights up green when the transmitter is turned on. When the battery is exhausted, the indicator starts flashing.

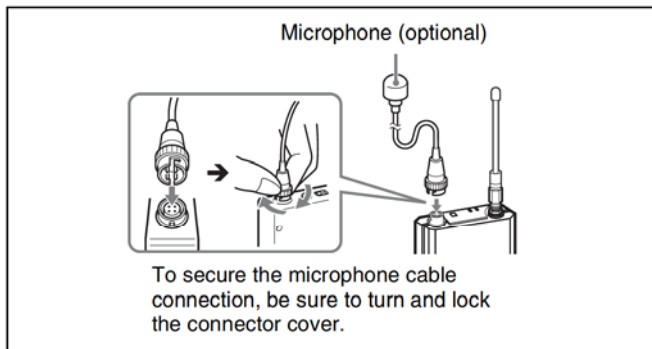
4 Audio input connector (SMC9-4S)

Connects the output plug from the optional lavalier microphone.

This connector also accepts the input from another wired microphone connected through the supplied microphone cable, or the audio output from a mixer, etc.



To connect a microphone



5 + or - button

Selects functions or values shown on the display. Holding down the - button while switching on the transmitter activates the pairing operation for the wireless remote control function.

6 POWER switch

Turns the transmitter ON or OFF.

7 Battery compartment

Accommodates two LR6 (size AA) alkaline batteries.

For details on how to insert the batteries, see "Power Supply" on page 5.

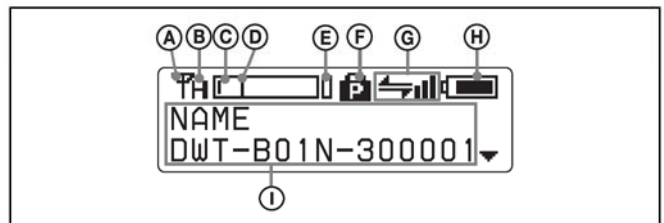
8 SET button

Adjusts displayed function settings and enters the value. Holding down the SET button while switching on the power turns the transmitter on without sending a signal.

9 USB connector (Micro USB)

Use this connector to connect an optional USB keyboard to carry out menu functions using key operations. By connecting the digital wireless receiver to this connector with the supplied USB cable, you can exchange the encryption key for encrypted transmission function.

10 Display section



A RF transmission indication

Indicates the current transmission status.

⚡: Currently transmitting

—: Transmission stopped

B RF (radio frequency) transmission power indication

Indicates the current transmission power setting. You can change the setting with the RF transmission power setting function.

H: transmitting at 50 mW

M: transmitting at 10 mW

L: transmitting at 1 mW

C Audio input level meter

Indicates the input signal level.

D Reference level gauge

Indicates the reference input level. When the attenuation is 0 dB with INPUT LEVEL set to MIC, -58 dBu (-60 dBV) is indicated. When LINE is selected for INPUT LEVEL, +4 dBu is indicated.

E Peak indicator

Warns of excessive input by lighting up when the signal is 3 dB below the level at which distortion begins.

F POWER switch lock indicator

Indicates that the POWER switch is locked, preventing the transmitter from being accidentally turned off or on.

For details, see “Locking the POWER switch (POWER SW LOCK)” on page 13.

Ⓔ Cross Remote condition indication

Indicates the signal transmission condition of the wireless remote control function (4 levels).

📶 : Good transmission

📶 : Somewhat good transmission

📶 : Somewhat poor transmission

📶 : Poor transmission

📶 : Unable to communicate with paired receiver

When the wireless remote control function is off, this indication does not appear.

Ⓕ Battery indication

Shows the battery condition.

For details, see “Battery indication” on page 5.

Ⓖ Menu display section

The status of 17 different functions are displayed here. To select the function, press the + or – button repeatedly.

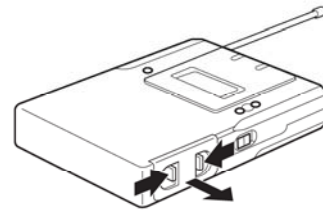
For details, see “Setting Menus” on page 10.

Power Supply

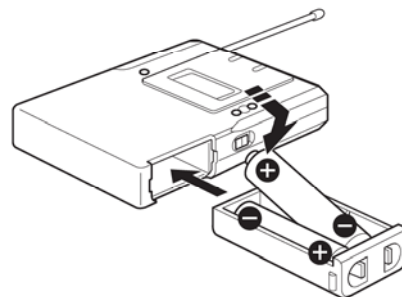
The transmitter can operate on two LR6 (size AA) alkaline batteries continuously for about 5 hours at 25 °C (77 °F).

Installing the batteries

- 1 Squeeze the battery-holder tabs inward (in the direction of the arrows) and slide out the battery holder.



- 2 Insert new batteries, making sure the polarities are correct, and then return the battery holder to its original position.



Battery indication

The power status is indicated by eight level indications. Replace both batteries when the battery indication starts to flash.

Be sure to check the expiration date printed date on the new batteries before using them.

Notes

- When BATTERY TYPE is set to TYPE1, the power status is indicated based on the use of new LR6 (size AA) Sony Alkaline batteries. An incorrect indication may result when a different kind of batteries, a different brand of batteries or old batteries are used. If you plan to use other kind of batteries than alkaline, set the BATTERY TYPE function according to the type of batteries to be used.
- If you plan to use the transmitter for a long period of time, it is recommended that you replace the batteries with brand new ones.

For details on BATTERY TYPE setting, see “Setting the battery type (BATTERY TYPE)” on page 12.

Setting the Transmission Channel

The transmitter provides groups of interference-free channels. When using multiple microphones and transmitters at the same time (simultaneous multi-channel operations) within the same area, selecting the same group and using a channel within that group can prevent signal interference.

To set the transmission channel on the transmitter, first you select the group and channel using the RF indicator and scanning functions on the receiver. Next you set the group and channel parameters to match the setting on the receiver.

Notes

- Certain transmission channels cannot be used with the wireless remote control function.
- “(INCOMPATIBLE WITH RF REMOTE)” will slide across the display during group/channel selection for transmission channels that cannot be used with the wireless remote control function.
- When a transmission channel that cannot be used with the wireless remote control function is selected, “RESTRICTED BY GP/CH SETTING” appears on the RF REMOTE screen and the wireless remote control function cannot be used. When using the wireless remote control function, select transmission channels for which “(INCOMPATIBLE WITH RF REMOTE)” does not appear during group/channel selection.

Selecting the group/channel

Notes

- Before doing this procedure, use the BAND function (see page 10) to set the transmitter to the bandwidth of the receiver you are using.
- The setting for this function cannot be changed during actual signal transmission.

Set the transmitter group (GP) and channel (CH) as follows:

For details on groups and channels, refer to “Sony Digital Wireless Microphone System Frequency Lists” on the supplied CD-ROM.

For details on menu operation, see “Basic Menu Operations” on page 10.

- 1 Turn off the power, and then while holding down the SET button, turn the power on.

The signal transmission stops.

- 2 Press the + or – button repeatedly until the GP/CH indication is displayed.

- 3 Hold down the SET button until the item to be set flashes.

- 4 Press the + or – button repeatedly to select a group.

- 5 Press the SET button to enter the group.

The channel indication starts flashing.

- 6 Press the + or – button repeatedly to select a channel.

- 7 Press the SET button to enter the channel.

Notes

To start signal transmission with the selected channel, turn off the power and then turn it on again.

To set the group/channel using the pairing mode of the Cross Remote

When the transmitter is paired with the receiver, the transmission channel of the transmitter is set to the receiving channel on the receiver automatically.

For details, see “Pairing with a receiver” on page 7.

Using the Cross Remote

This transmitter is equipped with a wireless remote control function that can be used to set the parameters (low-cut filter, attenuation operation, power save mode, etc.) of the transmitter through the receiver or other devices. This function makes it easier to operate and manage the microphone system while in the field.

This wireless control is 2.4 GHz IEEE802.15.4 compliant and has no effect on the RF band of digital wireless audio. This function is activated when pairing is established between the transmitter and the receiver using the RF REMOTE function.

Pairing must be done first before the wireless remote control function can be used.

Notes

If “RESTRICTED BY GP/CH SETTING” appears on the RF REMOTE screen, the wireless remote control function cannot be used. To use the wireless remote control function, select a different transmission channel.

For details on how to change the transmission channel, see “Setting the Transmission Channel” on page 6.

Pairing with a receiver

Pairing links the transmitter with the receiver which the wireless remote control function is to be used.

When the transmitter has been paired with a receiver through the receiver operation, turning on the transmitter while holding down the – button establishes the pairing immediately.

To carry out pairing through menu operations on the transmitter, do the following.

- 1 Set the receiver to be used for controlling the transmitter to pairing mode.
For details, refer to the operating instructions supplied with the receiver.
- 2 Press the + or – button repeatedly until the RF REMOTE indication is displayed.
- 3 Hold down the SET button until the item to be set flashes.
- 4 Press the + or – button repeatedly to select PAIRING.
- 5 Press the SET button to enter.

The transmitter sends a pairing request to the receiver which is on pairing mode.

Before established pairing, if you press any operation key on the transmitter, pairing mode will be cancelled. When pairing has been established, the wireless remote control condition level (indicated by )

goes up, RF REMOTE turns on, and the remote control function becomes operative.

To use the Cross Remote with a previous pairing

In the RF REMOTE indication, select ON.

Notes

- When you set RF REMOTE to ON, the transmitter will communicate with the receiver to which it was previously paired. To use the wireless remote control function with another receiver, you must perform the pairing procedure for that receiver.
- Multiple transmitters cannot be paired with the same receiver.
- If you reset all parameters by using the FACTORY PRESET function (*see page 13*), the pairing setting of the transmitter is also cleared.

The following transmitter settings can be done from the remote control:

- Transmitter name setting
- Frequency band/group/channel selection
- RF transmission power setting
- MIC/LINE setting and attenuator setting for audio input level
- Low-cut filter setting
- Power save setting
- Resetting accumulated use time
- Audio codec mode setting
- Internal signal setting
- POWER switch lock setting

For details on menu operation, see “Setting Menus” on page 10.

To perform remote control, the receiver must be equipped with a control function for the setting you want to control. For details, refer to the operating instructions supplied with the receiver.

To cancel the Cross Remote

In the RF REMOTE indication, select OFF.

Notes on the Cross Remote

The wireless remote control function on the transmitter uses the 2.4-GHz band and may thus be subject to interference from other devices.

- When pairing fails (“Pairing fail” is displayed), successful communication between the transmitter and the receiver has not occurred within a given amount of time. Pairing may be harder to do when another receiver is engaged in pairing nearby.
- When it becomes hard to use the remote control, the remote control may be improved by switching the wireless remote control function off, then on again in the RF REMOTE display, then re-pairing with the transmitter (change to a channel with less interference).

Using the Encrypted Transmission Function

To prevent hacking of the signal, the transmitter scrambles the signal during transmission. To use this function, select one of the following encrypted transmission modes:

Secure key mode: An encryption key that is automatically generated by the transmitter is used by both the transmitter and receiver in this one-to-one encrypted transmission method.

Password mode: You choose a password of up to eight characters that can be set for multiple transmitters and receivers. This enables encrypted transmission within a group.

Notes

Make sure the same mode is set on the transmitter and receiver.

Using secure key mode (SECURE KEY)

Use this mode for one-to-one encrypted transmission between one transmitter and one receiver.

An encryption key that cannot be read from the outside is automatically generated by the transmitter. This key is transmitted to the receiver through a USB connection or the RF REMOTE function, enabling encrypted transmission to take place.

The encryption key used by the transmitter and receiver is newly generated for each key transmission, resulting in highly secure communication.

The encryption key used between the transmitter and the receiver is saved when the power is turned off, so the encrypted transmission can be resumed the next time the power is turned on.

1 Preparing the transmitter (this unit).

- ① Hold down the SET button until the item to be set flashes in ENCRYPTION indication on the transmitter.
- ② Press the + or – button repeatedly to select SECURE KEY, and then press the SET button.

2 Preparing the receiver.

Select SECURE KEY on the receiver that receives the encryption key.

For details on receiver operations, refer to the operating instructions supplied with the receiver.

3 Exchanging the encryption key.

On the receiver, select USB or REMOTE (wireless remote) as the method for encryption key exchange.

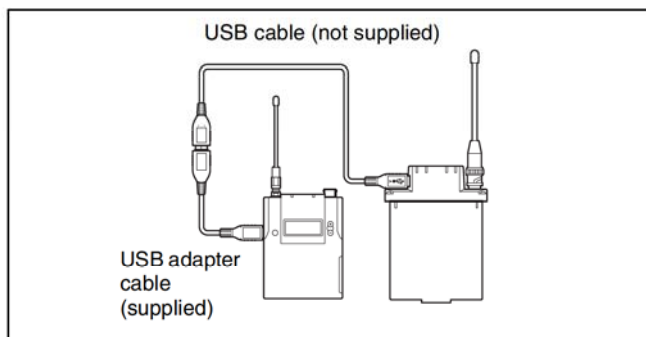
When the RF REMOTE function is off, REMOTE cannot be selected.

Note

When the receiver does not support encryption key exchange through USB connection, select REMOTE.

When you select USB:

Connect the transmitter to the receiver with the USB cable (not supplied) and USB adapter cable (supplied).



For details on receiver operations, refer to the operating instructions supplied with the receiver.

When you select REMOTE:

The transmitter searches for a receiver that it has been paired with. After the transmitter detects the receiver, the transmitter exchanges the encryption key with receiver and encrypted transmission begins.

Using password mode (PASSWORD)

Set this mode when multiple transmitters are paired with multiple receivers for encrypted transmission.

If both transmitters and receivers are set with the same user-designated password, the audio signal can be decoded. This mode is useful when multiple transmitters and receivers are used as a single group, or when the audio signal from one transmitter is received by multiple receivers at the same time.

1 Hold down the SET button until the item to be set flashes in the ENCRYPTION indication on the transmitter.

2 Press the + or – button repeatedly to select PASSWORD, and then press the SET button.

3 Input a password of up to eight characters on the transmitter.

To enter a password, use the procedure described in "Naming of transmitter (NAME)" on page 10.

4 Set the encrypted transmission function setting on the receiver to PASSWORD.

5 Set the same password that was set on the transmitter.

For details on receiver operations, refer to the operating instructions supplied with the receiver.

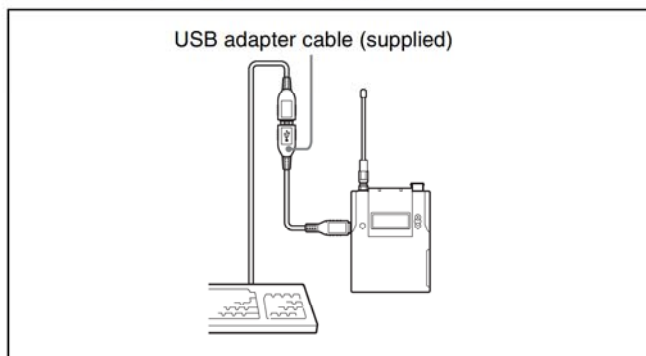
Note

It is recommended that you change the password periodically.

Using a USB Keyboard

Connecting an optional USB keyboard to the transmitter allows you to perform menu operations and enter your name and password for the encrypted transmission function from the keyboard.

A Micro USB connector is used on the transmitter. For this reason, use the supplied USB adapter cable.



Menu operations with a USB keyboard

You can use a USB keyboard to perform the same menu operations that you do on the transmitter.

The transmitter buttons correspond to the following keys on a USB keyboard:

Buttons on the transmitter	USB keyboard
SET	ENTER
+	↑
–	↓

To enter a text

With a USB keyboard, you can enter names and passwords for encrypted transmissions.

Characters that can be entered from a USB

keyboard: (space), 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z, !, #, &, \$, @, +, -, =, _, (,), [,]

(Passwords may consist of the numbers 0 to 9 and letters A to Z only.)

Special key: Backspace (BS) and Delete (DEL) keys.

Notes

- The number keys on the keyboard cannot be used.
- This transmitter is compatible with English-language keyboards only.
- USB keyboards with multiple functions, such as USB hub and pointing device, cannot be used.
- Power to the connected keyboard is supplied by the USB connector on the transmitter. The power rating is 100 mA. Keyboards that consume more power than that cannot be used.
- Do not leave the transmitter connected to the keyboard when not in use. If you do, the batteries in the transmitter will be drained more quickly.
- Text editing should be done with the alphabet, BS, DEL, and Enter keys.