



# Rewrite the future

## On Location Sound

DWX Series Update January 2021

# On-Set and Post Production Workflows

## Product/Solutions Update

**Product/Solution:** DWX Series & 3<sup>rd</sup> Party Recorders (Location Sound)

**Announcement Date (if applicable):** 3<sup>rd</sup> Party Firmware Updates **Now Available**

**Sony:** v1.10 for DWR-S03D

**SoundDevices:** v7.30 needed for Scorpio Series 

**Key Features/Benefits:** Protocol enabling Remote Control functions of DWX Series alongside use of SoundDevices and Aaton Digital

**Competitors Analysis (if applicable) :** Sony DWX series is the only 2 channel system available that has a Remote-control function for Gain and Frequency change (transmitter & receiver)



# Digital Wireless System

A new generation of digital wireless microphone system now expands product line-up to meet the demands for ENG or Location Sound.

Providing long battery life, multi-channel operation, wideband, high sound quality and reliable RF transmission to meet all demands.

The DWR-S03D slot-in receiver provides easy-and-fast channel settings that can be used with Sony camcorders as well as UniSlot standard devices with the interface adaptor.

UniSlot® is a registered trademark of Ikegami Tsushinki Co., Ltd.



# Golden Bullets

- High quality sound with low latency
- Reliable transmission with X-Dimension Diversity™ reception system and high dynamic range RF circuit
- Flexible interface with UniSlot and Super Slot capabilities
- Small, lightweight and robust magnesium body transmitter
- Multi-channel operation and Wideband (Max 148MHz)

# Product Line Up

## Receiver



DWR-S03D



DWA-SLAS1  
(Sony 15-pin)



DWA-SLAU1  
(Universal 25-pin)

## Transmitter



DWT-B03R



DWT-B30



DWT-P01N



DWM-02N

# DWR-S03D Features

- Reliable transmission with X-Dimension Diversity™ reception system and high dynamic range RF circuit
- Flexible interface for Sony camcorders and UniSlot standard devices
- 148MHz\*\*\* wideband
- 375kHz spacing high-density multi-channel operation
- Automatic scan sync function for fast and easy channel setting
- Various function coordination with the XDCAM shoulder cam
- High quality sound with CODEC MODE4
- Remote control of transmitter settings with Cross Remote function
- Transmitter/Receiver identifying function
- AES 256bit encrypted transmissions
- Setting Lock function
- User-set memory function
- Compact, lightweight, tough design
- Direct frequency input function \*\*
- Audio output setting (DIGITAL/ANALOG) \*\*



\*\*Added by v1.10 firmware

\*\*\*depends on version



# DWT-B03R Features

- High quality sound with 1.2msec low latency
- Small, lightweight and robust magnesium body
- Splash-proof ready for rain, sweat or spray (equivalent of IPX4/IPX5\*)
- Long battery life with rechargeable Li-ion battery (NP-BX1)
- 148MHz\*\* wideband
- Remote control of transmitter settings with Cross Remote function
- Selectable RF output power (2mW/10mW/25mW)
- Transmitter/Receiver identifying function
- Selectable 375kHz spacing high density channel plan
- AES 256bit encryption
- Setting Lock function
- User setting memory
- Phase reverse mode
- High resolution OLED Display



*\*IPX4/IPX5 is based on standard testing by Sony*

*\*\*depends on version*

# DWT-B30 Features

- High quality sound with CODEC MODE4
- Long battery life (6.5H)
- 375kHz spacing high-density multi-channel operation
- 148MHz\* wideband
- Remote control of transmitter settings with Cross Remote function
- Selectable RF output power (2mW/10mW/25mW)
- Transmitter/Receiver identifying function
- Switchable mic or line input level and adjustable attenuator
- AES 256bit encrypted transmissions
- Setting Lock function
- User-set memory function
- Phase reverse mode
- High resolution OLED Display
- USB for external power supply

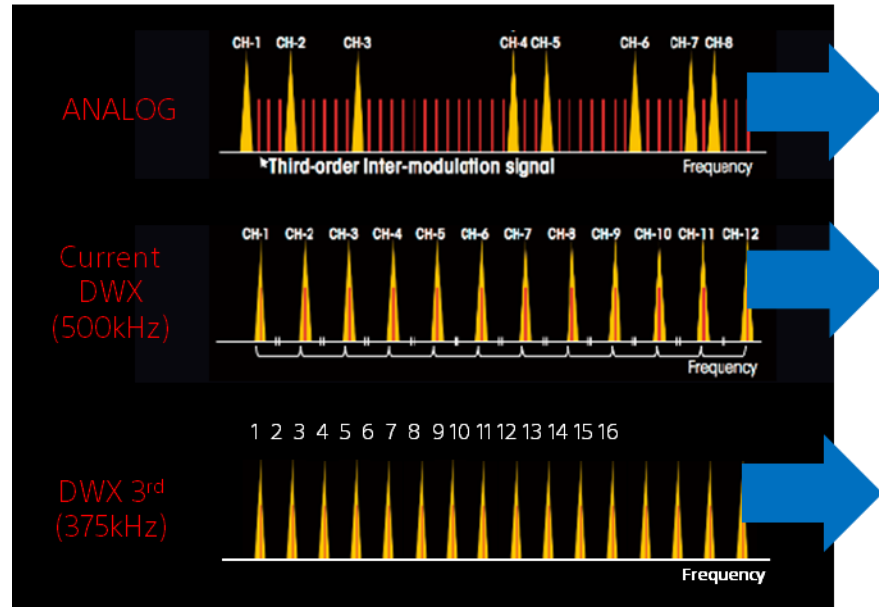


\*depends on version



# 375kHz high density channel plan

Allows for more simultaneous multi-channel operations



Maximum number of simultaneous operations

6MHz TV channel: 8 channels  
8MHz TV channel: 10 channels

6MHz TV channel: 12 channels  
8MHz TV channel: 16 channels

6MHz TV channel: 16 channels  
8MHz TV channel: 21 channels

# X-Dimension Diversity™

Dramatically improves transmission reliability, combining multiple dimension of diversity with Sony's digital technology and highly accurate calculation algorithm, which prevents burst error by synchronization loss.

The technology is based on a new algorithm that combines elements such as space information, time information, RF signal level, digital data synchronization information, etc. (obtained from 2 to 4 antennas) are blended with Sony's original method and highly accurate calculation.

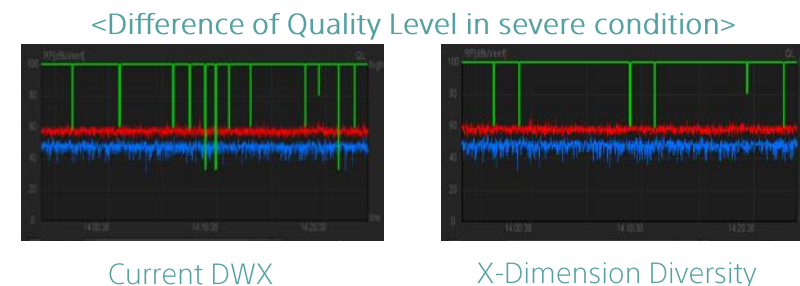
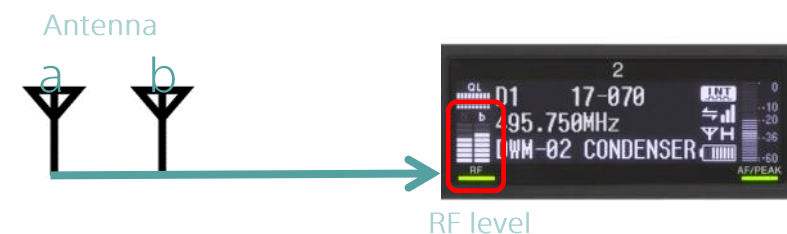
## Technology

In addition to current space diversity which uses RF signal level, the following elements are also considered.

- Time
- Digital data synchronization information
- Phase

Blending these elements with Sony's original technology and highly accurate calculation algorithm, it prevents burst error by synchronization loss (Burst error could be a cause of audio drop-out)

- It works with 2 to 4 antenna operation.

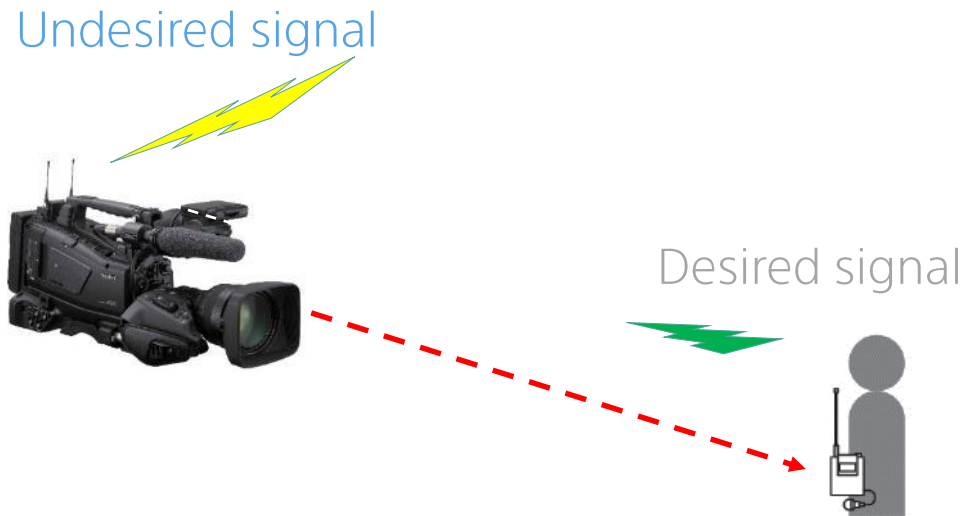


# High Dynamic Range RF circuit

Reduces RF overload and realize stable transmission

## New DWR-S03D:

High Dynamic Range RF circuit has improved RF dynamic range by approx.10dB. It keeps good RF condition even getting strong undesired signal from other RF devices.



# Codec Modes

MODE1: Audio codec mode that is compatible with first generation DWX-series devices.

MODE2: Audio codec mode that prioritizes short delay times while maintaining transmission stability and high audio quality.

MODE3: Audio codec mode that uses additional signal processing to suppress noise caused by unexpected pulse interference

**MODE4:** Audio codec mode that prioritizes audio quality for faithful reproduction while maintaining transmission stability and low delay time

# Codec Mode & Audio Latency

CODEC MODE	MODE 1	MODE 2	MODE 3	MODE4
	Codec Mode for 1 <sup>st</sup> Gen.	Low Latency Reliable RF transmission High Quality Sound	Prevents noise by specific pulse shaping interference	High Quality Sound Reliable RF transmission Low Latency
Suitable application	Customer who wants compatibility with current DWX	-Tour -Theatre -BC -ENG	-ENG -Speech	-Tour -Theatre -BC -ENG
Audio Latency with DWT-B03R, B30 +DWR-R03D	2.7 msec	1.2 msec (analog out) 2.2 msec (digital out)	3.7 msec (analog out) 4.6 msec (digital out)	1.3 msec (analog out) 2.3 msec (digital out)
Audio Latency with other transmitters +DWR-R03D	3.4 msec (analog/digital)	1.5 msec (analog out) 2.5 msec (digital out)	4.0 msec (analog out) 4.9 msec (digital out)	1.6 msec (analog out) 2.6 msec (digital out)
Audio Latency with DWT-B03R, B30 +DWR-S03D	2.1 msec (analog out) 1.9 msec (digital out) 0 msec with XDCAM	1.7 msec (analog out) 1.5 msec (digital out) 0 msec with XDCAM	3.0 msec (analog out) 2.8 msec (digital out) 0 msec with XDCAM	1.7 msec (analog out) 1.5 msec (digital out) 0 msec with XDCAM
Audio Latency with other transmitters +DWR-S03D	2.4 msec (analog out) 2.2 msec (digital out) 0 msec with XDCAM	2.0 msec (analog out) 1.8 msec (digital out) 0 msec with XDCAM	3.3 msec (analog out) 3.1 msec (digital out) 0 msec with XDCAM	2.0 msec (analog out) 1.8 msec (digital out) 0 msec with XDCAM

# System Configuration

## Location Sound



DWR-S03D



DWA-SLAU1

**SOUND**  **DEVICES**



SoundDevices Scorpio  
(Premium Portable Mixer-Recorder)



SL-6  
(Triple SuperSlot Wireless Module)



SL-2  
(Dual SuperSlot Wireless Module)

**Note**

- v7.30 firmware is needed
- SoundDevices mixer 688 is not supported.

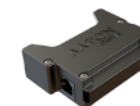


AATON Cantar  
X3  
(Location Audio Mixer-Recorder)

**AATON**  
DIGITAL



Cantar + Hydra



Hydra  
(Socket for Wireless Receivers)



# System Configuration

## Feature of the interoperability with Sound Devices mixer

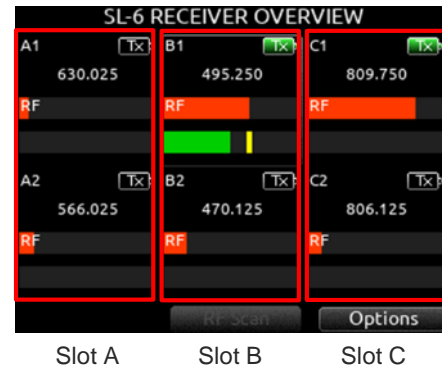
1. AES3 digital audio transmission from receiver to Sound Device Mixer (833, 888 and Scorpio)
2. Monitor the status of wireless microphones
3. Scanning with Sound Device's mixer through SL-6 or SL-2 and change the frequency of receiver (and transmitter)
4. Control the settings of receiver and transmitter



# System Configuration

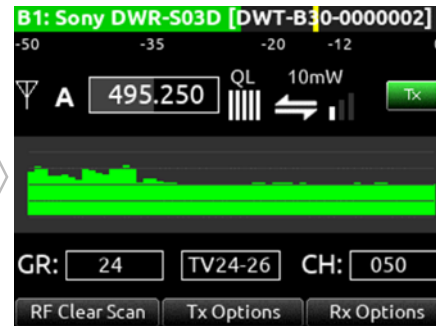
## Receiver menu on the mixer

RECEIVER OVERVIEW



Move the cursor and enter to display Receiver Details.

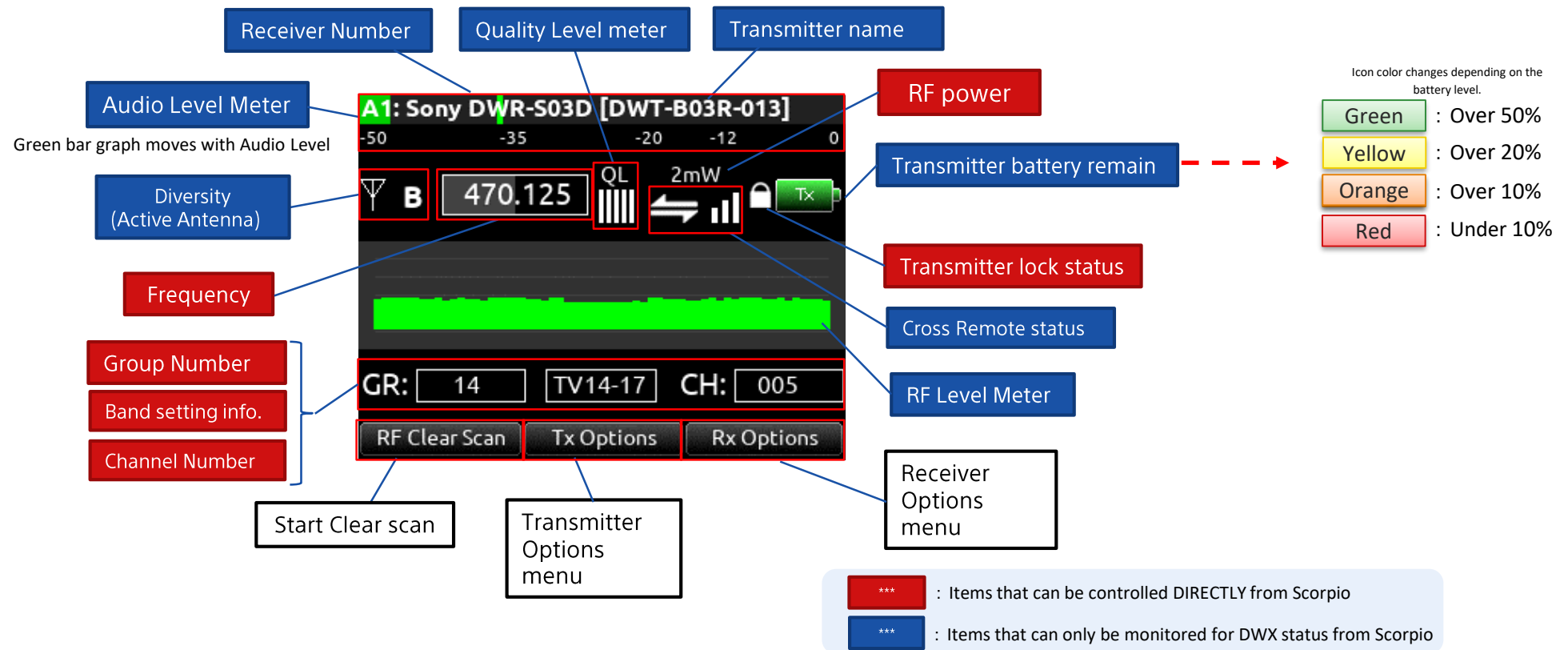
RECEIVER DETAILS



Receiver details are displayed.

# System Configuration

## Receiver Details



# System Configuration

## Receiver & Transmitter Details

### <TX Options details>

B1: Sony DWR-S03D - Tx Options	
1. Power Save	Active
2. +48V Phantom	OFF
3. Button Lock	Unlock
4. Attenuation	0 dB
5. Low Cut Filter	Off
6. RF Power	10mW
7. Sync Band/GP/CH	
8. Sync Codec Mode	

Active / Sleep  
Off / On  
Unlock/ Power / Set / Power&Set  
Depends on transmitter and region.  
Start syncing Band/GP/CH with transmitter.

### <RX Options details>

B1: Sony DWR-S03D - Rx Options	
1. Band Block	TV21-29
2. Dimmer Mode	Always On
3. Brightness	7
4. Codec Mode	Mode 2
5. Transmitter Search	
6. Show Receiver Info	

Depends on region.  
Auto Off / Auto Dim / Always On  
Setting the brightness  
(Dark) 1 2 3 4 5 6 7 8 9 10 (Bright)  
Depends on transmitter and region.  
Search Tx is started.  
Receiver firmware version and region are displayed.

# Specification DWR-S03D

Wireless Interface	WiDIF-HP
Oscillator Type	Crystal-controlled PLL Synthesizer
Reception Type	True diversity
Circuit system	Double Superheterodyne
Antenna Type	Detachable
Antenna Connector	SMA-R, 50 ohms
Carrier Frequencies - UC	470.125 MHz to 607.875 MHz, 614.125 MHz to 615.875 MHz, 25 kHz steps
Carrier Frequencies - CE7	L: 470.025 MHz to 614.000 MHz, 25 kHz steps H: 566.025 MHz to 714.000 MHz, 25 kHz steps
Carrier Frequencies - J	G: 1240.150 MHz to 1251.825 MHz, 1253.175 MHz to 1259.850 MHz, 25 kHz steps B: 806.125 MHz to 809.750 MHz, 125 kHz steps
Frequency Response	20Hz to 22kHz (typical)
Dynamic Range	106 dB or more typical (A-weighted, T.H.D=1%)
Distortion (T.H.D)	MODE1, MODE2, MODE4: 0.03% or less, MODE3: 0.3% or less
Audio Delay	MODE1; 1.9 msec (total: 2.7*/3.4**msec) (Analog output) , 1.9 msec (total: 2.7*/3.4**msec) (Digital output) MODE2: 0.5 msec (total: 1.2*/1.5**msec) (Analog output) , 1.5 msec (total: 2.2*/2.5**msec) (Digital output) MODE3: 1.9 msec (total: 3.7*/4.0**msec) (Analog output) , 2.8 msec (total: 4.6*/4.9**msec) (Digital output) MODE4: 0.6 msec (total: 1.3*/1.6**msec) (Analog output) , 1.6 msec (total: 2.3*/2.6**msec) (Digital output) *with DWT-B03R, DWT-B30 ** with other transmitters
Audio output connector	D-sub 15-pin connector (male) (when DWA-SLAS1 is attached) D-sub 25-pin connector (male) (when DWA-SLAU1 is attached)
Reference output level	Analog: -40 dBu Digital: -36 dBFS/-20 dBFS (switchable)
Wireless Remote Control	Cross Remote (2.4 GHz IEEE802.15.4 compliant)
Display	OLED
Operating voltage	6 V to 18 V DC
Consumption current	3.5 W or less (when DWA-SLAS1 is attached) 4.0 W or less (when DWA-SLAU1 is attached)
Operating Temperature	0°C to 50°C / 32°F to 122°F
Storage/Transport Temperature	-20°C to +60°C / -4°F to +140°F
Dimensions	Approx. 74 x 104 x 31 mm
Mass	Approx. 125 g
Supplied Accessories	Antenna (2) Before Using This Unit (3) CD-ROM (1)

# Specification DWT-B03R

Wireless Interface	WiDIF-HP
Oscillator Type	Crystal-controlled PLL Synthesizer
Antenna Type	$\lambda/4$ flexible wire
Type of Emission	G1E or G1D
Carrier Frequencies - CE7	L: 470.025 MHz to 614.000 MHz, 25 kHz steps H: 566.025 MHz to 714.000 MHz, 25 kHz steps
RF Power	2 mW/10 mW/25 mW (e.r.p) selectable
Input Connector	Small 3-pin connector with lock
Reference Input Level	MIC: -60 dBV (-58 dBu), 1 kHz (at 0-dB attenuator level) / LINE: +4 dBu, 1 kHz
Maximum Input Level	MIC: -22 dBu (with 0 dB attenuator), LINE: +24 dBu
Audio Attenuator Adjustment Range	0 to 48 dB (3 dB steps, MIC input mode only)
Frequency Response	Transmission: 20Hz to 22kHz (typical)
Dynamic Range	106 dB typical (A-weighted, T.H.D=1%)
Distortion (T.H.D)	MODE1, MODE2: 0.03% or less, MODE3: 0.3% or less
Audio Delay	MODE1: 0.8 msec (total: 2.7msec) /MODE2: 0.7 msec (total: 1.2msec)/MODE3: 1.8 msec (total 3.7msec) *Analog output
Wireless Remote Control	Cross Remote (2.4-GHz IEEE802.15.4 compliant)
Display	OLED
Power Requirements	DC 3.6 V (with Rechargeable Battery Pack: NP-BX1)
Battery Operating Time	Approx. 7 hours with Sony's NP-BX1 at 25°C(77°F) at 10-mW output (with the wireless remote control function off and DIMMER MODE set to AUTO OFF)
Operating Temperature	0°C to 50°C / 32°F to 122°F
Storage/Transport Temperature	-20°C to +60°C / -4°F to +140°F
Dimensions (W x H x D)	Approx. 53 x 60 x 17 mm (60 x 60 x 17 mm with the projection parts) (excluding the antennas)
Mass	Approx. 99 g
Supplied Accessories	Belt Clip (1)
	Carrying case (1)
	NP-BX1 (1)
	Scribble sheet (1)
	Operating Instructions (CD-ROM) (1)



# Specification DWT-B30

Wireless Interface	WiDiF-HP
Oscillator Type	Crystal-controlled PLL Synthesizer
Antenna Type	$\lambda/4$ flexible wire
Type of Emission	G1E or G1D
Carrier Frequencies - UC	470.125 MHz to 607.875 MHz, 614.125 MHz to 615.875 MHz, 25 kHz steps
Carrier Frequencies - CE7	L: 470.025 MHz to 614.000 MHz, 25 kHz steps
	H: 566.025 MHz to 714.000 MHz, 25 kHz steps
Carrier Frequencies - J	L: 470.150 MHz to 614.000 MHz, 25 kHz steps
	MH: 566.025 MHz to 713.850 MHz, 25 kHz steps
	G: 1240.150 MHz to 1251.825 MHz, 1253.175 MHz to 1259.850 MHz, 25 kHz steps
	B: 806.125 MHz to 809.750 MHz, 125 kHz steps
Carrier Frequencies - CN	29/CN: 638.025 MHz to 694.000 MHz, 25 kHz steps
RF Power	2 mW/10 mW/25 mW (e.r.p) selectable (except B model for Japan)
Input Connector	Sony 4-pin (SMC9-4S) (female) *European model: Small 3-pin connector with lock
Reference Input Level	MIC: -60 dBV (-58 dBu), 1 kHz (at 0-dB attenuator level) / LINE: +4 dBu, 1 kHz
Maximum Input Level	MIC: -22 dBu (with 0 dB attenuator), LINE: +24 dBu
Audio Attenuator Adjustment Range	0 to 48 dB (3 dB steps, MIC input mode only)
Frequency Response	Transmission: 20Hz to 22kHz (typical)
Dynamic Range	106 dB or more
Distortion (T.H.D)	MODE1, MODE2, MODE4: 0.03% or less, MODE3: 0.3% or less
Audio Delay	MODE1: 0.8 msec (total: 2.7msec) /MODE2: 0.7 msec (total: 1.2msec)/MODE3: 1.8 msec (total 3.7msec) /MODE4: 0.7 msec (total: 1.3msec)*Analog output
Wireless Remote Control	Cross Remote (2.4-GHz IEEE802.15.4 compliant)
Display	OLED
Power Requirements	3.0 V DC (2 x AA alkaline batteries) 5.0 V DC (USB power source)
Battery Operating Time	Approx. 6.5 hours (at 25 °C (77 °F), 10-mW output using Sony LR6 (AA)-size alkaline batteries with CODEC MODE set to MODE1 and the wireless remote control function off and DIMMER MODE set to AUTO OFF)
Operating Temperature	0°C to 50°C / 32°F to 122°F
Storage/Transport Temperature	-20°C to +60°C / -4°F to +140°F
Dimensions (W x H x D)	Approx. 63 x 17 x 73 mm (excluding the antennas) (W x H x D)
Mass	Approx. 125 g (4.4 oz) Including batteries, not including Microphone
Supplied Accessories	Spare battery case (1) Soft case (1) Microphone cable (4-pin to XLR-type 3-pin, except European model) (1) Carrying case (1) Scribble sheet (1) Before Using This Unit (3) CD-ROM (1)