

BW Wireless System

Operating Instructions



SDI **HDMI™**

BW-100S Transmitter / Receiver



BON ELECTRONICS
<http://www.bon.co.kr>

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SAFETY INSTRUCTIONS

- To help avoid damaging the product, connect only one power (AC or DC) in operation.
- Rough handling of product may cause physical damage or malfunction.
- Never insert anything metallic into the monitor openings. Doing so may create the danger of electric shock.
- Product malfunction might occur due to strong radio frequency, strong electric area with many cables, or another wireless communication device.
- It is not recommended to use these devices in harsh weather condition or very low/high temperature.
- If your monitor does not operate normally, or if there are any unusual sounds or smells coming from it, unplug it immediately and contact us.
- Please do not disassemble the monitor. No service will be provided in that case.
- Due to possible radio interference, it is strongly not recommended to use these devices for rescue purpose.
- When smoking, strange sound or smell comes out from the device, turn power off and request a service.

ACKNOWLEDGEMENT

To avoid Link failure between devices or to view clear screen by transmission, please follow directions below.

- Use maximum 4 receivers for 1 transmitter.
- Turn on transmitter and wait until LED is on before turning on another transmitter, when you use two or more transmitters.
- The distance between receivers when multiple receivers are used should be at least 1 meter (3 feet).

FEATURES

Distance up to 150M (500 feet)

Distance up to 500M (1500 feet) with directional dish antenna

Transmits Multi-Format Signal up to 1080/60p (3G, HD SDI)

Low Latency (20ms)

Separate Audio Transmission via Audio Input Port

Bi-Directional Data Link at 11Kbps

Time Code Transmission

Tally Transmission, Tally LED, Return Tally Transmission through GPI Port

Low Power Consumption (10W)

Automatic Encoding Rate Adjustment for RF Condition

Signal Protection with 802.11i

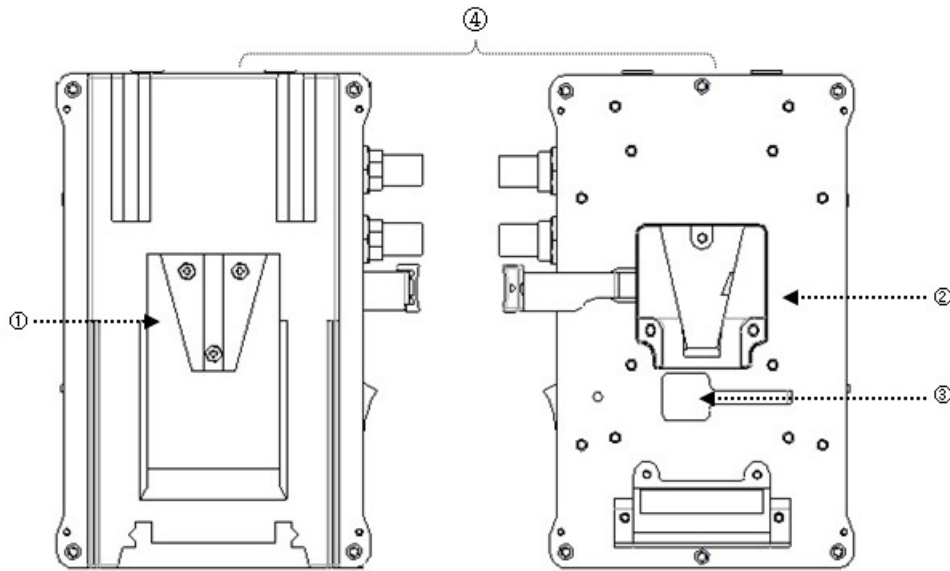
No FCC License Required (U-NII-1 and U-NII-3)

The Adoption of MIMO (Multi Input / Multi Output)

V-Mount Plates for Camera and Battery Attachment or

DV-Mount Plate for Battery Attachment

PART DESCRIPTION



1) V-Plate Adapter

Built-on V-Plate for V-Mount battery. An Anton Bauer adapter is attachable.

2) V-Mount Adapter

V-Mount adapter is built on other side to attach a V-Mount battery. This adapter can be removed and be replaced with DV Mount, Dual DV Mount, or Anton Bauer adapter.

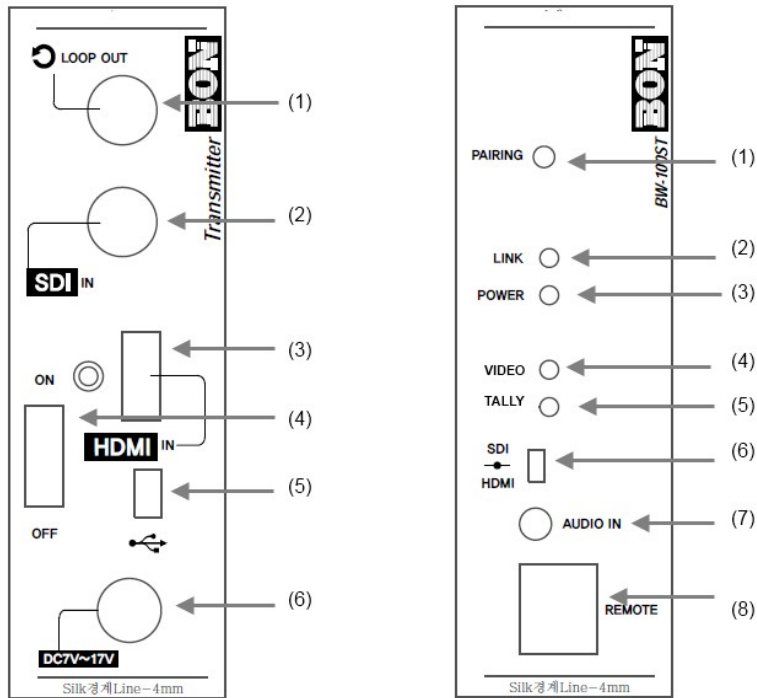
3) Internal Power Port

DV Mount can be attached on this port to get power. DC 7V ~ 30V.

4) Update Port

Firmware is updateable through this port with mini USB gender.

Side (Transmitter)



LEFT SIDE

1) Loop Out

Loop-through port for SDI input port.

2) SDI Input

HD/SD SDI input port which supports SMPTE standards with audio signal.

3) HDMI Input Port

HDMI Input with audio signal. Please note that some DSLR cameras does not send audio signal through external port.

4) Power On/Off

5) Mini USB

Update port for firmware. Users should be get help from our service representative before update.

6) DC Input

12V DC power input port. 7~30V can be accepted when a battery is used.

RIGHT SIDE

1) Pairing Button

Normally users don't need to press this button. Use this button only to make a pair of transmitter and receiver when those are not paired, or to use different transmitter and/or receiver.

2) Link LED

This LED turns on when the transmitter and the receiver are connected.

3) Power LED

4) Batt LED

This LED flashes when the battery life is about to be out.

5) Tally LED

This LED is turned on when Tally Control is in use.

6) SDI/HDMI Selection Switch

Select SDI or HDMI input.

7) Audio In

This port accepts Stereo Audio (e.g. from a microphone) to input audio separately from video port.

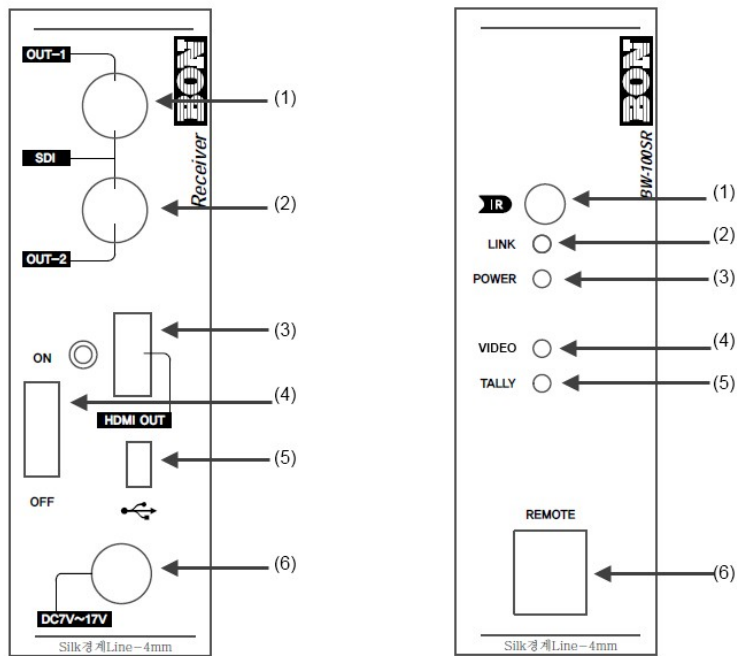
8) Remote Port

This port accepts tally control signal.

9) Infrared Remote Control Port

Remote control reception port.

Side (Receiver)



LEFT SIDE

- 1) SDI Out 1
- 2) SDI Out 2
- 3) HDMI Out
- 4) Power On/Off
- 5) Mini USB Port

Special firmware update port. This port is seldom used, instead users may use **USB update port on top**. In case to use this port, help from our service representative is strongly required.

- 6) DC Power Port

12V DC power input port. 7~30V can be accepted when a battery is used.

RIGHT SIDE

- 1) Infrared Remote Receiver

2) Link LED

This LED turns on when transmitter/receiver connected.

3) Power LED

4) Battery Life LED

It flashes when battery is about to be out.

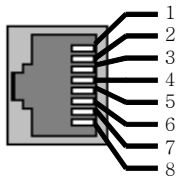
5) Tally LED

It turns on when tally control is in use.

6) Remote RJ-45 Port

This port is used to control the device through ethernet cable.

RJ-45 Pin Assignment

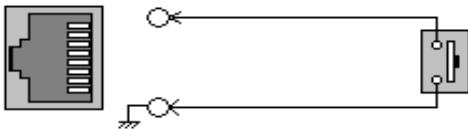


Remote (RJ-45)

Remote PIN Assignment			
1 PIN	GPI Port 1(NC)	5 PIN	GPI Port 5 (NC)
2 PIN	GPI Port 2 TALLY_ON_RED	6 PIN	GPI Port 6 (External Tally Green Out Only)
3 PIN	GPI Port 3 (NC)	7 PIN	GPI Port 7 (External Tally Red Out Only)
4 PIN	GPI Port 4 (NC)	8 PIN	COMMON(GND)

GPI Port (RJ-45)

A pin switch like below can be used for connection. Pin 1~7 are control terminals, Pin 8 is GND terminal.



IR Remote Control Unit

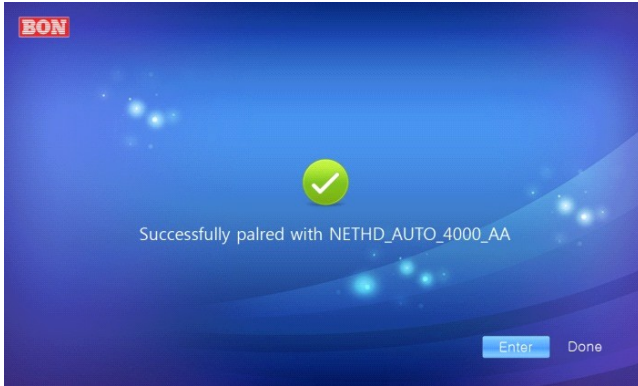


- 1) Press Menu to view OSD initial screen.
- 2) Use up/down button to move, enter to select or launch.
- 3) Press Quit button to move back.
- 4) Press Menu to go back to Display screen.
- 5) SEL button is for transmitter selection when multiple transmitters are used.
e.g. Press SEL button to use the 2nd transmitter when the 1st transmitter is used.

Remote control maximum distance is 3M (10 feet)

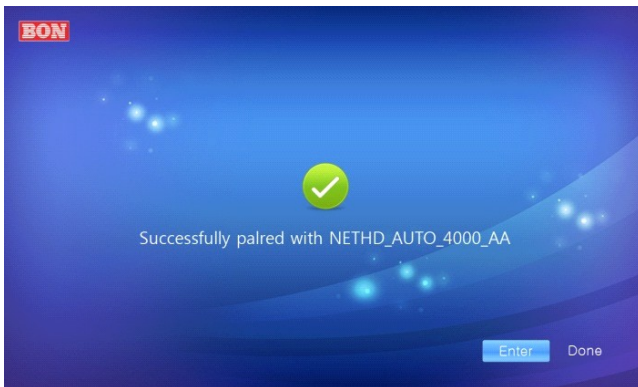
OSD MENU

Pairing Procedure



- 1) from Menu / Configure External Inputs, select received Mac Address.
- 2) Press the Pairing button on the transmitter.

After a couple of seconds, the success screen shown like below:



Press Enter and Menu to connect.

CAUTION

Use up to 4 receivers for a transmitter.

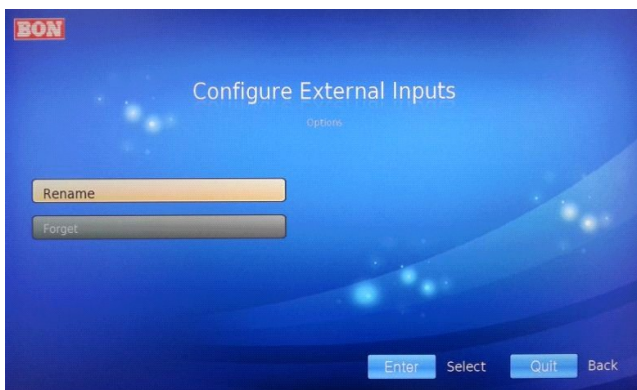
If two or more transmitters are used, each should be turned on one by one, after each LINK LED turned on.

If two or more receivers are used, the distance between each should be 1 meter(3.2 feet) at least.

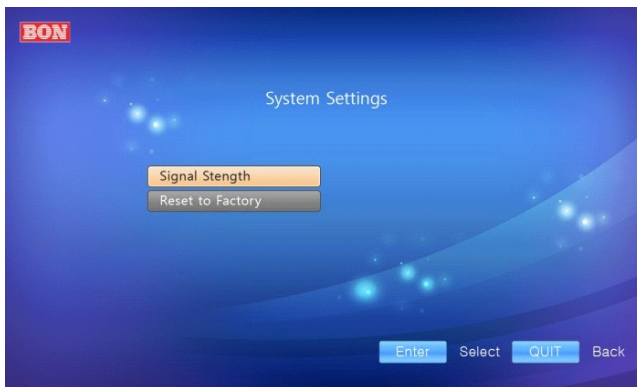
Configure External Inputs



Selects external input mode and save it, and enables user to change device name.
Disconnects(Forget) connection with transmitter and re-connect.



System Settings



Signal Strength

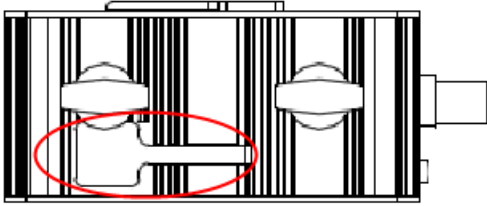
Show signal strength using bar.

Reset to Factory

Reset to factory default setting.

FIRMWARE UPDATE

Firmware update needs belowed procedure.



Use USB port on top, not on side

Transmitter Firmware

- 1) Download the software on a USB flash memory. The file name should be like *cavm_netHD.bin*.
- 2) Attach it onto the transmitter using USB gender.
- 3) Turn the power on and update will start. (About 3~4 minutes spent)
- 4) Check Link LED is on.

Receiver Firmware

- 1) Download the software on a USB flash memory. The file name should be like *cavm_netHD.bin*.
- 2) Attach it onto the transmitter using USB gender.
- 3) Connect SDI or HDMI out with a monitor to check completion.
- 4) Turn the power on and update will start. (About 3~4 minutes spent)
- 5) Monitor screen will be displayed when complete.

SPECIFICATIONS

Transmitter

		BW-100ST
Input	1 x BNC	3G/HD/SD-SDI, 2.97G/1.485G/270M
	1 x HDMI	HDMI, (with HDCP v.1.1), 19pin Female
Audio Input	1 x Phone Jack In	3.5mm TRS, Line Level Input
Output	1 x BNC	SDI Active Loop Output
Video Formats	HD : 1920x1080 (60p, 59.94p, 50p) 1920x1080 (60i, 59.94i, 50i, 30p, 29.97p, 25p, 24p, 23.98p) 1920x1080 (30psf, 29.97psf, 25psf) 1280x720 (60p, 59.94p, 50p) SD : NTSC, PAL	
Radio	Frequency	U-NII-1(5.15~5.25 GHz), U-NII-3(5.725~5.85 GHz)
	Transmission Power	20mW(13.5dBm)
	Transmission Distance	150m(with normal antenna), 500m(with special antenna)
	Latency	20ms
	Encoding/Decoding	H.264 Base Profile @4.2
	2 x Antenna	SMA Female
	Security	802.11i compatible signal protection by 128bit AES encryption
General	1 x GPIO	GPI-7 Port, RJ-45P Jack
	2 x mini_USB	Firmware Update (MAIN , MICOM)
	4 x LED	Power, Link, Video, Tally
	3 x Switch	Pairing, Input Selection, Power
	Battery	V-Mount, DV-Mount, Anton Bauer Mount
	Power Requirements	DC (7V~30V) With AC Adapter(100 ~ 230V, 50Hz/60Hz)
	Power Consumption	10W
	Operating Temperature	0°C ~ 40°C (32°F ~104°F)
	Operating Humidity	20% ~ 80% RH
	Accessories	• Power Cable • 2 Antennas • DC Adapter
	Option	• Carrying Case • 20dBi Directional Antenna • DV Battery Mount

Receiver

		BW-100SR
Output	2 x BNC	3G/HD/SD-SDI, 2.97G/1.485G/270M
	1 x HDMI	HDMI Out
General	1 x IR	Remote Control Unit
	1 x GPIO	GPI-7 Port, RJ-45P Jack
	2 x mini_USB	F/W Update (MAIN , MICOM)
	4 x LED	Power, Link, Video, Tally
	1x Switch	Power
	Battery	V-Mount, DV-Mount
	Power Requirements	DC (7V~30V) With AC Adaptor(100 ~ 230V, 50Hz/60Hz)
	Power Consumption	9W
	Operating Temperature	0°C ~ 40°C (32°F ~104°F)
	Operating Humidity	20% ~ 80% RH
	Accessories	<ul style="list-style-type: none"> • Power Cable • Manual(CD) • DC Adaptor • Remote Control Unit • 2 Antennas
	Option	<ul style="list-style-type: none"> • Carrying Case • 20dBi directional antenna • DV Battery Mount

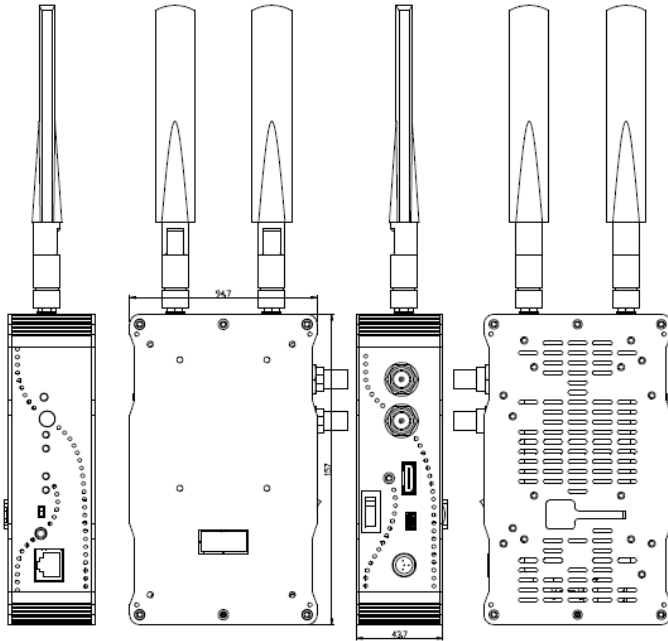
COMPATIBLE SIGNAL FORMATS

Format	BW-100S (SDI)	BW-100S (HDMI)
NTSC	O	-
PAL	O	-
1280x720/50P	O	O
1280x720/59.94P	O	O
1280x720/60P	O	O
1920x1080/23.98P	O	O
1920x1080/24P	O	O
1920x1080/25P	O	O
1920x1080/25psf	O	-
1920x1080/29.97P	O	O
1920x1080/29.97p sf	O	-
1920x1080/30P	O	O
1920x1080/30psf	O	-
1920x1080/50i	O	O
1920x1080/59.94i	O	O
1920x1080/60i	O	O
1920x1080/50p	O	O
1920x1080/59.94p	O	O
1920x1080/60p	O	O

Juddering or signal loss might occur due to location and/or weather condition.
 Highlighted formats are more safe from juddering than others.
 Motion pictures might not move smoothly in bad environment.

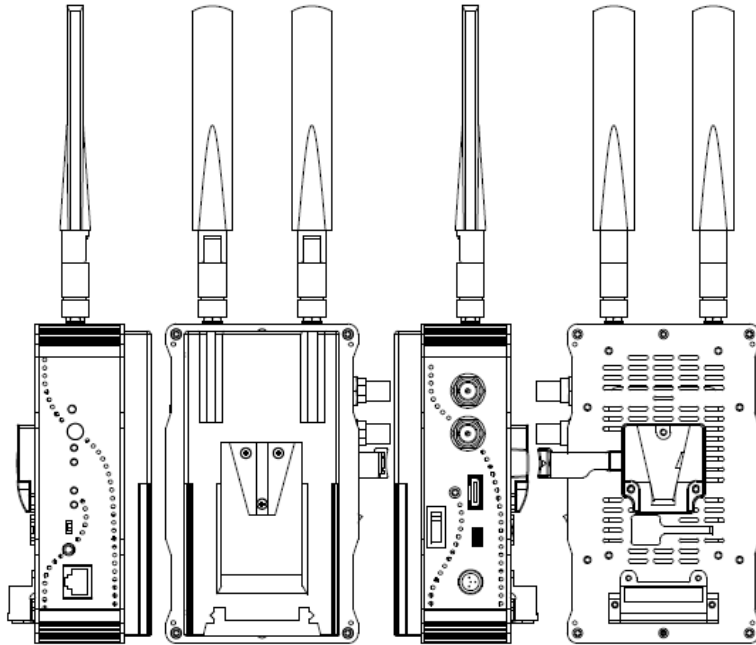
APPEARANCE

BW-100ST / BW-100SR



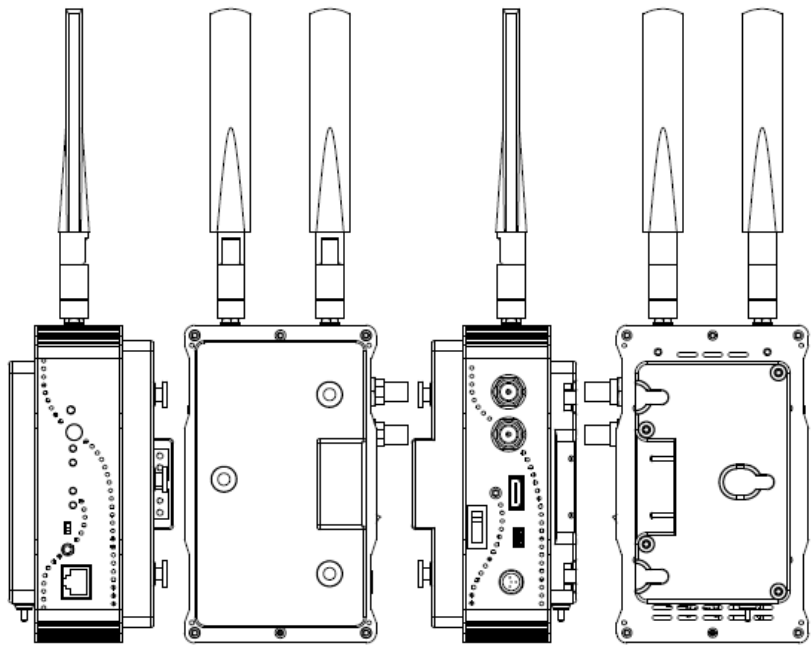
MODEL	Unit	W	H	D
BW-100ST	mm	94.7	157	43.7
BW-100SR	inches	3.7	6.2	1.7

BW-100STV / BW-100SRV (V-Mount Version)



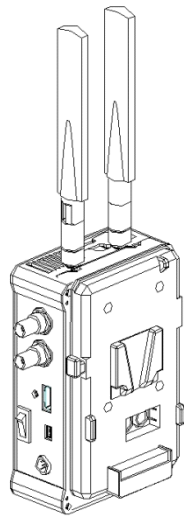
MODEL	Unit	W	H	D
BW-100STV	mm	94.7	157	43.7
BW-100SRV	inches	3.7	6.2	1.7

BW-100STA / BW-100SRA (Anton Bauer Adapter Version)

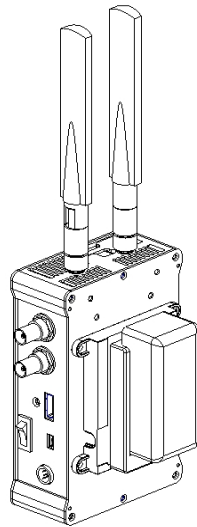


MODEL	Unit	W	H	D
BW-100STA	mm	94.7	157	43.7
BW-100SRA	inches	3.7	6.2	1.7

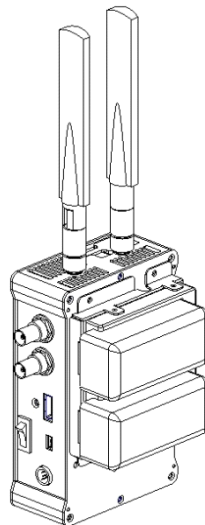
ACCESSORY KIT



V-Mount Battery Adapters

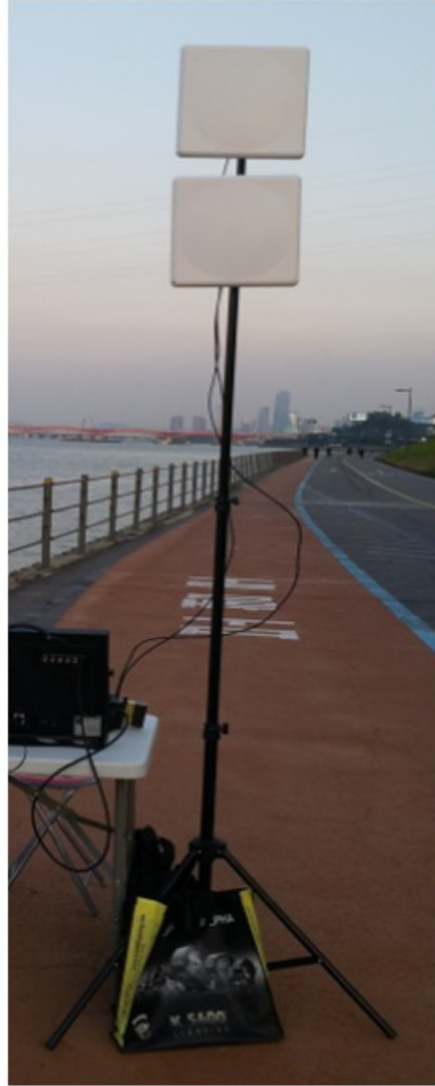
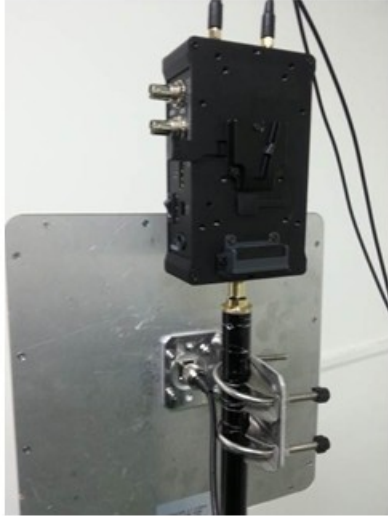


Single Battery Mount Adapter



Dual Battery Mount Adapter

ANTENNA ACCESSORY KIT



TROUBLESHOOTING

Try belowed solution when the product has a problem. Many problems are not caused by product defectiveness, they can be solved with the solutions below. If you cannot solve the problem with them, please contact the reseller or BON Electronics directly to get a help.

Symptom	Solution
Power does not turn on	Change battery Check battery voltage (it should be above 7V) Try with DC adapter
Power turned off while use with battery	Try with full-charged battery (Please note there will be frequent power off when battery is not enough)
Transmitter/receiver not connected	Turn off and on transmitter, or receiver (Try factory reset and pairing on continous connection failure)
Signal not good even in short distance	Check antennas connection to the device On Receiver's OSD menu, check system settings / signal strength is enough.
Wi Fi connection timed out	Turn the receiver's power off and on
The screen freezes when signal cable removed from transmitter	This is ordinary to show the last picture just before disconnection. Connect signal cable to the transmitter to continue motion pictures.

WARRANTY

Free Service

If the product needs to be repaired in 15 months from the shipment.

If the product needs to be repaired in 6 months from charged service.

Exceptions (to be charged)

- damage caused by accident, abuse, misuse, water, flood, fire, or other acts of nature or external causes
- damage caused by service performed by anyone who is not an authorized service provider
- damage to a product that has been modified or altered without the written permission of BON
- damage caused by electric shock or by backward voltage input
- if a service is requested even though the problem does not require repair service
- 4 years passed after shipping

Service to be Charged

If the product needs to be repaired after 15 months from the purchase.

MODIFICATION OF PRODUCT

Dimensions, specifications or design of the product are subject to change without prior notice for product improvement.



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