



OPERATION MANUAL

HDMI WIRELESS



I. Important Information

Take time to read this user manual before you use your HDMIWIRELESS TX and HDMIWIRELESS RX .

It contains important information and notes regarding operating your wireless HD receiver and transmitter.

The SPATZ guarantee applies provided the product is handled properly for intended use, in accordance with its operating instruction, but may not apply to the below cases:

- Repairs or product modification and alterations have been executed by unauthorized service personnel.
- Damages is caused by accidents including but not limited to lighting, water, fire, or moisture.
- Do not use provided power adapter with specific power rating not compliant in the attached label of power adapter.
- The model number on the product has been altered, deleted, removed or made illegible.

Safety Precautions

	WARNING! RISK OF ELECTRICAL SHOCK DO NOT OPEN	
WARNING: TO REDUCE THE RISK OF ELECTRICAL SHOCK DO NOT REMOVE THE COVER NO USER-SERVICEABLE PARTS ARE INSIDE REFER SERVICING TO QUALIFIED PERSONNEL		



Danger: Be careful with electricity.

- Power to the units must be switched off before any work is undertaken, such as any AV device connection or TV connection.
- **Power outlet:** To prevent electric shock, be sure the electrical plug used on the receiver's and transmitter's power cord matches the electrical outlet used to supply power to the receiver/transmitter.
- **Power cord:** Be sure the power cord is routed so that it will not be stepped on or pinched by heavy items.
- **Power overloading:** Avoid overloading electrical outlets or extension cords which otherwise could result in electric shock or fire.
- **Lightning:** For protection from lightning or when the receiver/transmitter is left unattended for a long period, disconnect it from the power source.
- Always disconnect the power cord from the power outlet when you are not using your wireless HD receiver and transmitter. This reduces your risk of electric shocks or fire.



Warning

- This product should not be exposed to dripping or splashing. No object filled with liquids, such as vases, should be placed on the product.
- **Object Entry:** To avoid electric shock, never stick anything in the slots on the case or remove the cover.
- Place receiver/transmitter on a flat. Hard and stable surface.

- **Ventilation:** Do not block the ventilation slots on the receiver/transmitter or place any heavy object on top of it. Blocking the air flow could damage the receiver. Arrange components so that air can flow freely around the receiver. Ensure that there is adequate ventilation if the receiver is placed in a stand. Put the receiver/transmitter in a properly ventilated area, away from direct sunlight or any source of heat.
- **Water Exposure:** To reduce the risk of fire or electric shock, do not expose the receiver/transmitter to rain or moisture.

DECLARATION OF CONFORMITY

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and
- (2) This device must accept any interference received, including interference that may cause undesired operation.

EMI (Electro Magnetic Interference) tested.

EN 55022 Information technology equipment----

Radio disturbance characteristics--- Limits and methods of measurement

EN 61000-3-2 Electromagnetic compatibility (EMC)---

Part 3-2:Limits---Limits for harmonic current emissions(equipment input current up to and including 16 A per phase)

EN 61000-3-3 Electromagnetic compatibility (EMC)---

Part 3:Limits---Section 3: Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current ≤ 16 A per phase and not subject to conditional connection

EN 55024 Information technology equipment----

Equipment---Immunity characteristics---Limits and methods of measurement

EN 301 489-1

Electromagnetic compatibility and Radio spectrum Matters (ERM); Electro Magnetic Compatibility (EMC) standard for radio equipment and services;

Part 1 : Common technical requirements

EN 301 489-17

Electromagnetic compatibility and Radio spectrum Matters (ERM); Electro magnetic Compatibility(EMC) standard for radio equipment;

Part 17: Specific conditions for 2,4 GHz wideband transmission systems, 5GHz high performance RLAN equipment and 5,8 GHz Broadband Transmitting Systems

● **EN 60065** Audio , video and similar electronic apparatus—Safety requirements

no guarantee that interference will not occur in a few particular installation. If the interference is happened, increase the separation distance between the transmitter and receiver.

- HDMIWIRELESS is susceptible to interference from 5GHz wireless device, such as router or other wireless device. For example, if you have an 802.11n router, configure it to use the 2.4 GHz band rather than the 5GHz band.
- Optimal Range between HDMIWIRELESS transmitter and receiver is between 1 meter and 30 meters within line of sight.

2. Introduction

HDMIWIRELESS TX and HDMIWIRELESS RX wireless video transmission solution allows users to place your HDTV set or projector where you want- just connect your HDTV set and HDMIWIRELESS RX by HDMI cable. Any display like LCD, PDP or computer monitor with HDMI input connector are applicable to our HDMIWIRELESS RX .

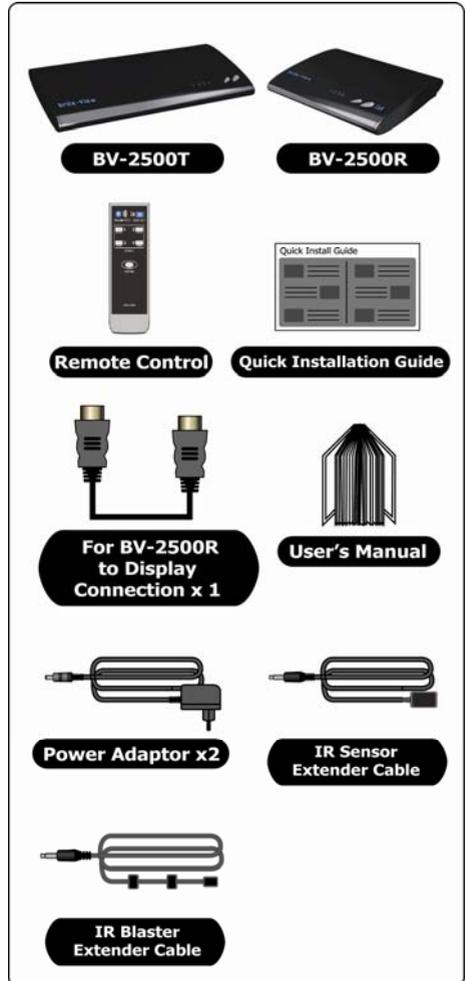
Connect the HDMIWIRELESS TX to your multiple High-Definition devices such as Cable/Satellite Box, HD Set-Top Box, Blu-Ray DVD Player, Game Console, and Media Center PC hidden in your cabinet behind your seating area. It reserves clean space around the perimeter of your TV set in your living room and solves the cluttered cables connection problem. You may also place the transmitter HDMIWIRELESS TX and source AV component near HDTV set.

This solution delivers uncompressed 1080P @24/30 Hz True Cinema video content to your existing HDTV set wirelessly. It operates the transmission in 4.9 GHz~ 5.9 GHz frequencies that can adjust its frequency automatically in case of interference with another RF system. With built-in Omni-directional antennas, it can transmit uncompressed video content over 20 meters (LOS: Line of sight) whole-room range with no latency.

Provided IR Sensor Extender Cable and IR Blaster Extender Cable in the package allows users to point the existing remote control of source components at HDMIWIRELESS RX directly for device operation. (These devices with Transmitter connection may be placed in a closet or separate room.)

2.1 Packing Content

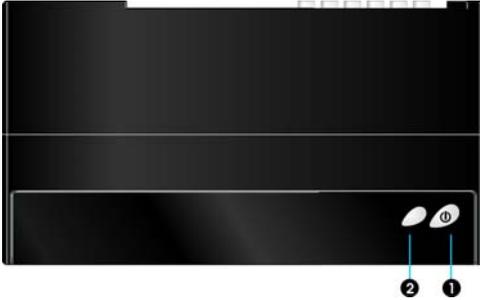
Please check whether the following items are present in the package. If any items missed or damaged, please call your dealer.



2.2 Overview

A. HDMI WIRELESS TX: FREEline HD transmitter

■ Front Panel Buttons and LEDs



❶ Power Button with LED indicator

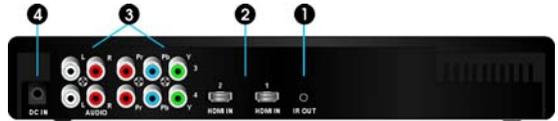
Press to turn the transmitter on and off. The indicator in the Power button is lit solid blue when the power is on, and turns red in standby mode.

❷ Source Selection Button

Press to switch between the various inputs of the transmitter. The one of four LED indicators next to this button is lit solid blue to show current input you switch. Press this button to cycle through connected sources in sequence.

Note:

- (1) Make sure you have connected the HDMI WIRELESS RX correctly to your HDTV set by HDMI cable, and have selected the correct **HDMI** input on your TV.
- (2) You can also press the **TRANSMITTER POWER** button to turn the box on.



■ Main unit backside

❶ IR Blaster Extender Jack

Plug the IR Blaster Extender Cable into the **IR OUT** jack at rear panel of the transmitter. Attach the IR blaster to the device connected to the HDMI WIRELESS TX. You can point the device's existing remote at the HDMI WIRELESS RX receiver to control connected device.

❷ HDMI IN

Connect Transmitter to High-definition video devices that have an HDMI port using a provided HDMI cable.

❸ Component Video IN/ Audio L/R IN

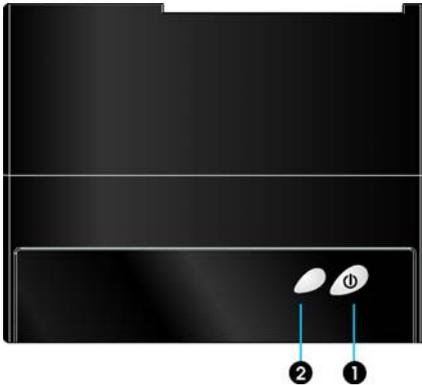
Connect to devices with Component jack (YPbPr) and Audio L/R, such as DVD player, Blu-Ray Player or Cable Set-Top Box.

❹ DC IN

For connecting the HDMI WIRELESS TX power adapter.

Note: The HDMI WIRELESS TX transmitter can support two devices running on HDMI cable and another two running on YPbPr component video signals at the same time. Only one AV source from HDMI WIRELESS TX can be selected and displayed in the HDTV set once Transmitter is paired successfully with receiver.

B. HDMIWIRELESS RX : FREEline HD receiver



■ Front Panel Buttons and LEDs

❶ **Power Button with LED indicator**

Press to turn the receiver on and off. The indicator in the Power button lights up in blue when the power is on, and turns red in standby mode. The signal quality indicator next to the Power button shows the receiving signal quality from transmitter.

❷ **Source Selection Button**

Press this button repeatedly until you see the desired transmitting video on your TV set from your High-Definition device.



■ Main unit backside

❶ **IR Sensor Extender Jack**

Plug the IR Sensor Extender cable into the **IR IN** jack at the rear panel of the receiver. Generally, sensors with cable are placed near your HDTV set so that you can easily receive and relay the IR command for external device connected with ZWD-2500T.

❷ **HDMI OUT**

Connect a HDMI cable. The other end connects to the HDTV set.

❸ **DC IN**

For connecting the HDMIWIRELESS RX power adapter.

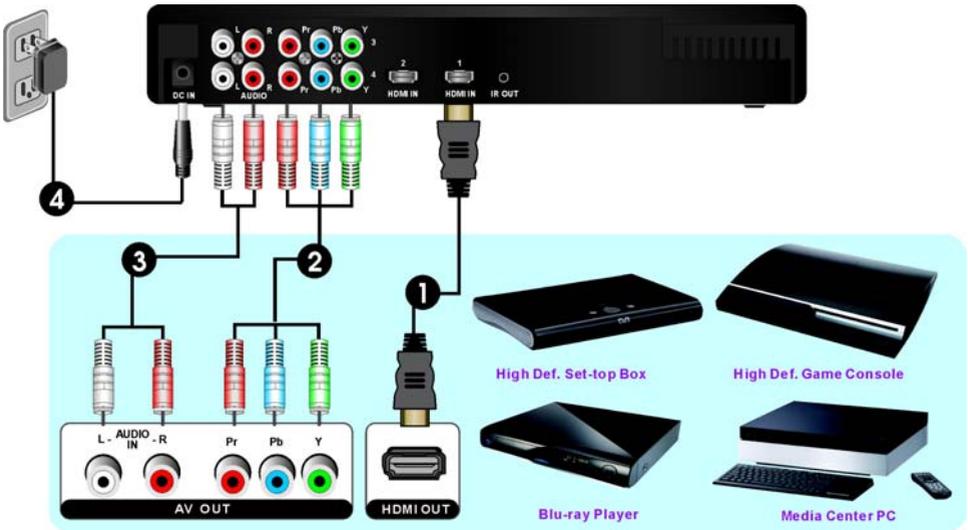
C. Remote Controller Instruction



Button	Function Description
TRANSMITTER/ RECEIVER power	Press to turn the HDMIWIRELESS transmitter/receiver on/off.
CHANNEL	Press to change another wireless channel manually if you experience video noise.
HDMI 1/2	Press this button to switch the video source from the connected HDMI device source.
YPbPr 3/4	Press this button to switch the video source from the connected YPbPr device source.

3. Installation

Step I: Multiple Devices Connection with HDMIWIRELESS TX:



- (1) Connect the HDMIWIRELESS TRANSMITTER's "HDMI IN" to the High-Definition device's "HDMI OUT" by HDMI cable (included). The HDMIWIRELESS has two HDMI inputs for newest High-Definition devices connection, like PS3, Blu-ray Player.
- (2) Connect a set of RCA cables (green, blue, red-colored cables) between the Y/Pb/Pr IN connectors of the HDMIWIRELESS TX and corresponding COMPONENT (Y/Pb/Pr OUT) connectors on your High-Definition devices.
- (3) Use Audio Cables to connect between the "AUDIO L/R IN" connectors of the HDMIWIRELESS TX and the corresponding "AUDIO L/R OUT" connectors on your High-Definition devices. (AUDIO L connection cable is the one with white color and AUDIO R connection cable is the one with red color.)

Note: Transmitter has 4 source inputs which means you can have 4 choices for video sources such as DVD, cable STB, PS3 and media center. Only one source can be selected and played, so you need to cycle transmitter to the one desired video source.

- (4) Connect the supplied power adapter between the DC IN jack of the HDMIWIRELESS TX and a mains socket. The LED indicator in the POWER button lights up in solid blue when the HDMIWIRELESS TX is connected to the power mains .

Note: The AV components are not included in HDMIWIRELESS package.

Step2: HDTV set Connection with HDMIWIRELESS RX :



- (1) Connect the HDMI cable between the HDMI OUT jack of the HDMIWIRELESS RX and your HDTV set.
Press the **SOURCE/INPUT** button on your TV's remote to select "**HDMI**" video mode.
- (2) Attach one side of the provided Velcro (fastening tapes) to the receiver back cover. Then use Velcro of another side to attach the receiver directly to the wall next to the HDTV set.
- (3) Connect the supplied power adapter between the DC IN jack of the HDMIWIRELESS RX and a mains socket.

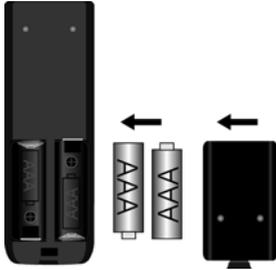
Step3: If necessary, connect the Infrared (IR) Blaster & Sensor. Users can point hand-held remote control of your High Definition device at HDMIWIRELESS RX or HDTV set directly for source device's operation at Line-of-sight (20 meters transmission distance).



- (1) Plug the IR Blaster cable into the **IR OUT** jack of the ZWD-2500T. Place the IR blaster head in the IR sensor of your High-Definition video devices nearby.
The infrared (IR) sensor is on the front of your High Definition device, usually behind a dark, sometimes reddish plastic window.
When the IR blaster cable is connected, it relays infrared command from your remote to the various device components. Users can control AV device with transmitter connection using existing remote control directly.
 - (2) If your connected device will be out of the direct line of sight of your remote controls, plug the IR Sensor Extender cable into the **IR IN** jack at the rear panel of the receiver.
- Note:**
- (1) The remote control of HDMIWIRELESS can only switch between inputs of ZWD-2500. It does not switch the inputs of your HDTV set or projector.
 - (2) IR blaster only supports 38K (NEC) and 36K (RC5, RC6) remote's signal protocol. Some device may not be supported.

Step 4: Power on your HDMIWIRELESS TX and HDMIWIRELESS RX

- (1) Place the two AAA batteries into the remote control.



- (2) If users already plugged the power cord, the power or HDMIWIRELESS will be turned on automatically. If it's under Standby mode (The POWER LED shows red), press the TRANSMITTER and RECEIVER POWER button to turn on the HDMIWIRELESS TX and HDMIWIRELESS RX.



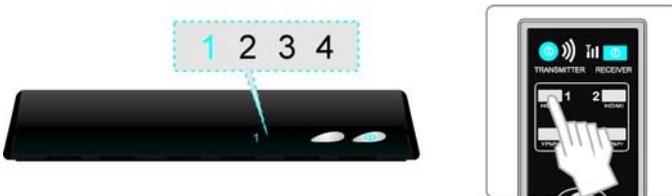
- (3) During warm-up, the POWER LED will blink blue until the signal link between HDMIWIRELESS TX and HDMIWIRELESS RX is established.



- (4) Ensure your LCD TV set or projector is set to HDMI input mode and already powered on.



- (5) Press the Source **1HDMI 2HDMI 3YPbPr 4YPbPr** button, until you see the available video from your device.



- (6) If you have some electronic devices like cordless phone, wireless access point/ router used with 5GHz channel frequency near the ZWD-2500, you may experience no/noise picture or diminished sound quality. Press the **CHANNEL** button three seconds to adjust to an appropriate channel for ZWD-2500.



Note:

A. How to change to a different wireless channel for ZWD-2500:

	1. Enter wireless RF channel adjustment mode	2. Changes to the next RF wireless channel	3. Exit the wireless RF channel adjustment mode
Method	Press the CHANNEL button three seconds.	Press the CHANNEL button again.	There is no button on the remote pressed about 10 seconds,
LED indicator status	The all SOURCE LED 1-4 will blink 3 times to show the current RF channel.	The SOURCE LED will automatic show the current switched RF channel.	Show the current input source.

B. LED indicator detail overview for the Wireless Channel:

RF Channel;	Frequency (MHz)	LED status	LED blinking number	Area
# 32	5160		12	Europe & USA
# 36	5180		13	
# 40	5200		14	
# 44	5220		23	
# 48	5240		24	

(7) If all the operation is normal, the POWER, SOURCE LED will glow solid blue and Signal Quality will light in blue with 3 signal quality. Please refer the next LED details part:

Note:

- Make sure your multiple High-Definition devices connected with HDMIWIRELESS TX have already powered on.
- Warming-up or source switching time should be approximately 15~20 seconds during the normal operation.
- HDMIWIRELESS remote control will not control your A/V components' operation.
- Video from the YPbPr component source device appears but dim, press the **3/4 YPbPr** button repeatedly on the remote control to fine-tune the picture performance.

TRANSMITTER/RECEIVER LED indicator light details:

LED indicator status light on the front that indicates what's happening..

Note:

- A. The Quality LED indicator shows whether a connection is active with the transmitter side. During the normal operation, the Quality LED indicator will light in blue with 3 signal quality. If there is no signal quality and blinking blue in Source & Status LED, the transmitter are most likely out of range. You may verify the range and adjust the distance closer between transmitter and your HDTV set with receiver. (The maximum video transmission range is 20 meters at line of sight (LOS) scenarios.)
- B. It's normal to see the Source LED blinking when you switch your AV sources.
- C. If disconnection or lost link occurs, it maybe due to the following reason:
 - a. If the range is over the maximum transmission distance.
 - b. Either transmitter or receiver has been switched off.
- D. If the SOURCE LED continues to blink blue (slower than no signal mode) and there is

POWER LED	Source LED	Mode	Status
Solid Red	Off	Standby	In standby mode
Solid Red	Off	HDMI connection in Hot Plug status.	TV & Receiver are both powered on, and then remove HDMI cable connection from receiver. After 1 minute, the receiver will automatically enter the standby mode which POWER LED stops blinking and turns solid red.
Blinking Blue	Blinking	In wireless Linking	Warning up in progress or interrupted RF connection.
Solid Blue	Blinking 3 times per second (Quickly)	On Mode	Input from selected source device is not detected.
	Blinking 1 times per second (Slowly)		Unrecognized video format. (Not support or out of range.)
	Solid blue		Recognized video format. Transmission is available with stable RF signal.

no/abnormal video displayed, this is an indication that video format from your A/V source device is not supported or out of range.

4. Troubleshooting

Problem	Solution
The HDMI/WIRELESS front panel power indicator (red LED) doesn't light up.	<ul style="list-style-type: none">• Check that the power plug of ZWD-2500T/HDMI/WIRELESS RX is properly inserted into a functioning power outlet.
There is no video is displayed	<ul style="list-style-type: none">• Verify that the proper cable has been selected and

<p>on your TV screen.</p>	<p>installed between the desired transmitter input connector and your High-Definition device.</p> <ul style="list-style-type: none"> • On your TV side, select the HDMI source you connected to HDMIWIRELESS RX . • Verify the POWER LED and SOURCE LED indicator of ZWD-2500. <p>Flashing blue power LED</p> <p>* Ensure the transmission range between transmitter and receiver is not over 20 meters (LOS-Line of sight) transmission distance. Move the transmitter closer to the receiver.</p> <p>* Press CHANNEL on the remote control to change wireless channel manually.</p> <p>Solid blue POWER LED + slow and flashing SOURCE LED</p> <p>* Ensure your video format is recognized/ supported and within the format range.</p> <p>*Connect the source device to your TV to check and modify the video format compatibility.</p> <p>*Check your video resolution with HDMI input from your device is 1080p @ 24/30 Hz, 1080i, 720p, 576p, 480p.</p> <p>Solid blue POWER LED + quick and flashing SOURCE LED</p> <p>* Ensure the proper cables are connected between transmitter and your devices.</p> <p>* Ensure your HD devices connected with the HDMIWIRELESS transmitter are powered on.</p> <ul style="list-style-type: none"> • Press the 1HDMI 2HDMI 3YPbPr 4YPbPr button in the RCU to search the available video source.
<p>Poor picture quality or intermittent video play.</p>	<ul style="list-style-type: none"> • Check your video resolution with HDMI input from your device is 1080p @ 24/30 Hz, 1080i, 720p, 576p, 480p. Please refer to the Supported Resolution chapter that it define video consumer timing of your HD device HDMIWIRELESS supports. • HDMIWIRELESS does not support 1080p/50 or 60Hz video format. • Press CHANNEL on the remote control to change wireless channel manually. • Ensure transmission distance is not over 20 meters (LOS).
<p>No audio.</p>	<ul style="list-style-type: none"> • Check your TV's volume is properly set and not in "MUTE" mode. • Check that the audio connectors are properly connected. • Ensure the format of audio from the source device we can support. Please refer the details in Chapter 6 Audio Formats support.

5. Supported Resolution

If the SOURCE LED continues to blink blue (slower than no signal mode) and there is no/abnormal video displayed, this is an indication that video format from your A/V source device is not supported. Ensure that the consumer timing of your HD device is compliant with below detail sheet.

Video Format Timings	Format Name	HDMI in	Component in
Primary CEA Video Timing			
<input type="checkbox"/> 720(1440)x480i @ 59.94Hz	480i	n/a	YES
<input type="checkbox"/> 720(1440)x480i @ 60Hz		n/a	n/a
640x480p @ 59.94/60Hz	480p	YES	n/a
720x480p @ 59.94Hz		YES	YES
720x480p @ 60Hz		YES	n/a
720(1440)x576i @ 50Hz	576i	n/a	YES
<input type="checkbox"/> 720x576p @ 50Hz	576p	YES	YES
1280x720p @ 50Hz	720p	YES	YES
1280x720p @ 59.94/60Hz		YES	YES
1920x1080i @ 50Hz	1080i	YES	YES
1920x1080i @ 59.94/60Hz		YES	YES
Secondary CEA Video Timing			
1920x1080p @ 23.98/24Hz	1080p	YES	YES
1920x1080p @ 25Hz		YES	YES
1920x1080p @ 29.97/30Hz		YES	YES

2 channels PCM	44.1KHz	48KHz
16 bits	YES	YES
24 bits	YES	YES

6. Audio Formats Support

- Analog Audio from Base Band audio L/ R inputs: Convert to 2-channel by fixed 24 bits/sample with sampling rate 48KHz by I²S bus over Wireless High-Definition Interface transmission
- Digital Audio from HDMI inputs: Support up to 3.072Mbit/s
- - 16~ 24 bits/sample with sampling rate 32~ 48KHz 2 channels PCM by I²S bus.
 - 2 to 8 channels 16~ 24 bits/sample with sampling rate 32~ 96KHz by S/P DIF bus over Wireless High-Definition Interface transmission.
Support Dolby Digital, Dolby Digital EX, Dolby Digital Surround EX.

7. Product Specification

General Specifications			
Supported Video Resolution	Component Input	1080p @ 24/30 Hz, 1080i, 720p, 576p, 576i, 480p, 480i	
	HDMI Input	1080p/@ 24/30 Hz, 1080i, 720p, 576p, 480p	
Supported Audio Formats	Analog Audio	48KHz and 24-bit Per Sample	
	Digital Audio	up to 3.072 Mbps AC-3 and DTS	
Transmission Distance		The maximum video transmission range is 20 meters line of sight (LOS) scenarios and 10 meters beyond line of sight.	
System Latency		No latency (<1ms)	
Antenna		High Performance Internal Antennas	
Operating Frequencies		4.9~ 5.9GHz (non-DFS Frequency Bands) for US, EU, JP, TW	
Power Supply		100~ 240V AC in, 5V 3A DC out Power Adaptor	
Operating Temperature		0~40°C	
Regulations		FCC, CE	
Interfaces		ZWD-2500T	HDMIWIRELESS RX
A/V Interfaces	Component Input	Two Sets of RCA Connectors	-
	Analog Audio L/ R Input	Two Sets of RCA Connectors	-
	HDMI Input	Two (Type A)	-
	HDMI Output	-	One (Type A)
Control Signal Interfaces	IR Sensor	YES	YES
	IR Sensor Extender	-	2.5mm Jack
	IR Blaster Extender	2.5mm Jack	-
Power Interface	Power Input	5V DC Jack	5V DC Jack
Switches	Front Power Switch	YES (One Tack Switch)	YES (One Tack Switch)
	Source Selection Switch	YES (One Tack Switch)	YES (One Tack Switch)
LEDs	Status LED	1 x LED (Two Tone: Blue& Red)	1 x LED (Two Tone: Blue& Red)
	Source LED	4 x Blue LEDs	4 x Blue LEDs
	Signal Quality Status	-	3 x LEDs
Dimensions		295(W)x 149(L)x 45.5(H) mm	180(W)x 140(L)x 39(H) mm

