

 Clear Picture

**PURE | AV**<sup>™</sup>  
by Belkin

 Clean Sound

# RemoteTV<sup>™</sup>

## 5GHz Wireless TV Adapter

Transmit high-quality audio video wirelessly to a TV in another room



User Manual



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# Introduction

Congratulations and thank you for purchasing the PureAV RemoteTV. This product delivers superior-quality MPEG-2 audio video in two rooms at once through the 5GHz frequency range, without interruption, so you can experience home entertainment like never before. Now you can view your favorite movies anywhere in your home without the hassle of running cables or moving media players from room to room. PureAV RemoteTV delivers the quality, ease of use, and freedom you need. Please review this User Manual carefully to ensure you enjoy the superior home entertainment experience PureAV offers.

This package consists of two primary pieces—the PureAV RemoteTV Transmitter (the Transmitter) and the PureAV RemoteTV Receiver (the Receiver). The Transmitter sends audio and video from a source component, such as a cable box, satellite receiver, digital video recorder, or DVD/CD player to the Receiver, which is connected to a receiving component, such as a TV, LCD, or plasma display. The Transmitter converts analog input into high-quality digital MPEG-2 transport streams, which are transmitted wirelessly to the Receiver. The Receiver decodes the digital MPEG-2 stream and converts it to the analog format to display on an audio video device. Our Remote Control Extender lets you use an existing remote to control your video source in the other room. This saves you the hassle of walking back and forth and the expense of buying a separate remote.

# Benefits

- Provides long reach between Transmitter and Receiver for full-house coverage up to 350 ft. or 106m (subject to change due to environment)
- Provides uninterrupted service and optimal resolution utilizing proprietary wireless technology to reduce interference and deliver up to 40Mbps of bandwidth—far exceeding the performance of the average wireless audio video sender
- Incorporates component-video connectivity option for obtaining optimal resolution and brighter, more accurate movies and programs
- Delivers superior video quality using MPEG-2 technology in both the encoder/Transmitter and decoder/Receiver
- Allows use of an existing remote to control the video source in one room from a receiving source in the other room with the included Remote Control Extender (IR pass-through device)
- Contains integrated antennas; requires no external antennas
- Thwarts viewing by unauthorized receivers with 3DES content encryption
- Supports NTSC video format
- Supports standard-definition TV (SDTV) at full D1 MP@ML levels
- Connects to TV via AV or SV terminal
- Installs easily; simply plug in audio and video cables and go\*

**\*For optimal performance,** we recommend upgrading your cables to premium **PureAV Silver Series RCA Audio** and **Component Video Cables**. PureAV Interconnects are designed to deliver the full potential of your home theater components, and capture the true sound and image experience of today's high-tech music and movies.

**Component Video** separates color into its primary components using three cables to transmit three distinct signals. This provides brighter, more accurate colors and sharper detail. If your equipment does not have a Component Video option, upgrade to S-Video.

**S-Video** separates brightness from color using two separate conductors to create clean, accurate video reproduction, exceeding the performance of Composite Video.

# Package Contents

- One PureAV RemoteTV Transmitter
- One PureAV RemoteTV Receiver
- Two RCA Audio Video Cables
- Two 5VDC Adapters
- One PureAV Remote Control Extender (IR adapter)
- User Manual

# System Application Diagram

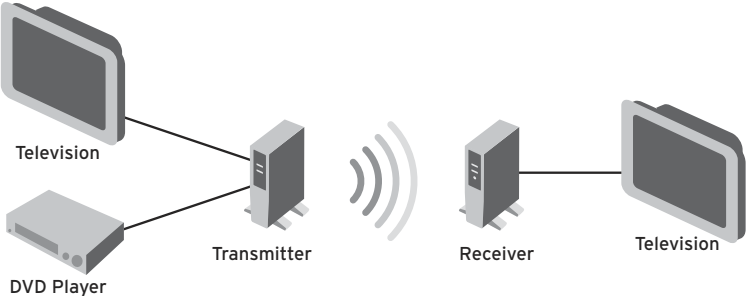
Following are two types of connections that can be made using the PureAV RemoteTV.

PureAV RemoteTV

a) A single audio video stream sent wirelessly to a single receiver.



b) A single audio video stream sent wirelessly to a single receiver while connected to a local display.



# Transmitter and Receiver Details

This section describes the front and rear panels of the PureAV RemoteTV Transmitter and RemoteTV Receiver.

## Front Panel



Transmitter

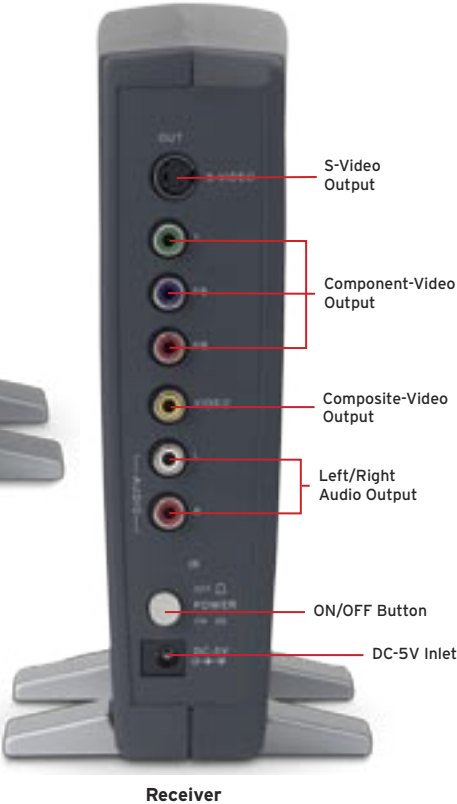
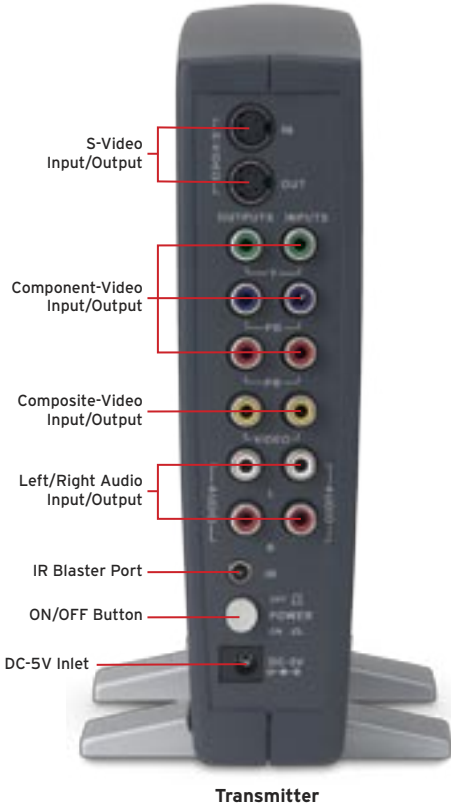
Receiver

Label	LED	Status
POWER	Green	Device plugged in
LINK	Orange	Initializing
	Orange-Blinking	Signal survey
	Green	Connected
	Red	No signal
VIDEO SOURCE		This button is used to switch the input mode. The default mode is composite video.

# Transmitter and Receiver Details

PureAV RemotetV

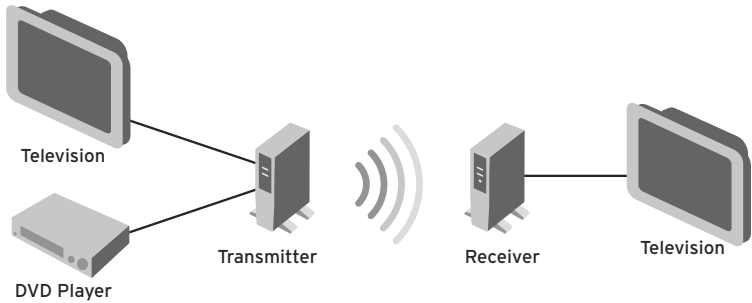
## Rear Panel



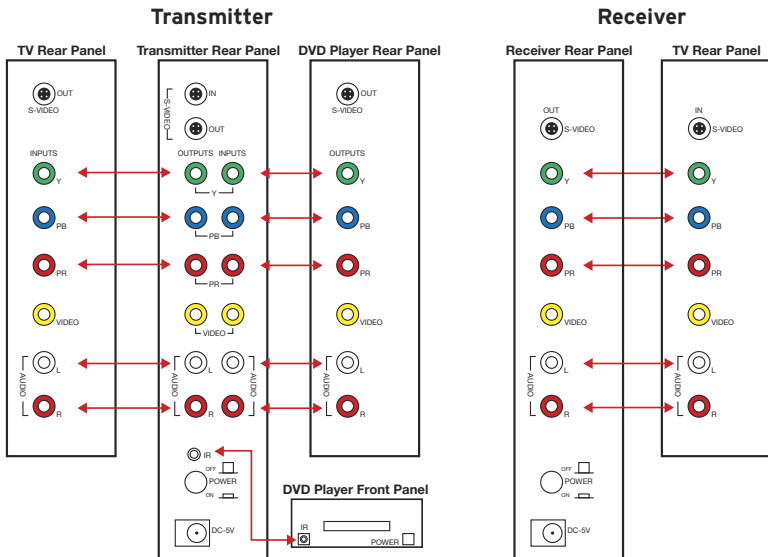


# Installation Using Local Display

Here are several examples illustrating how to connect the PureAV RemoteTV using a source device and two displays.



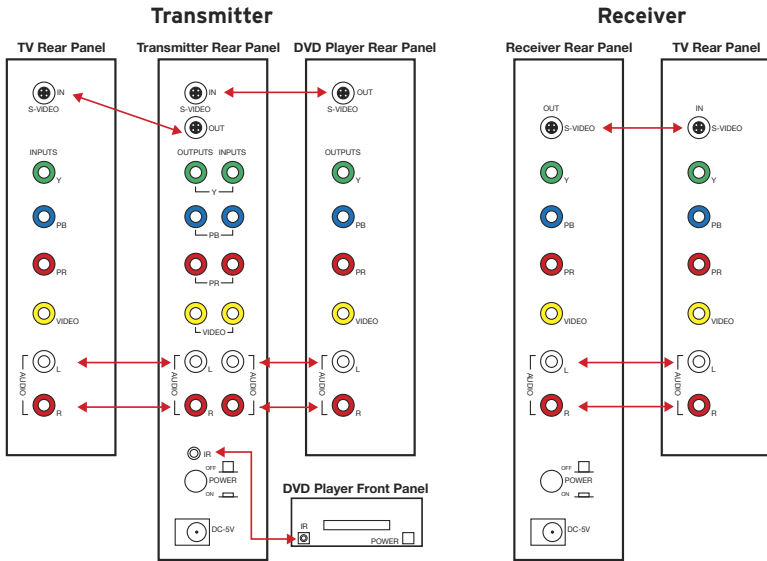
## Cable Connections for Component Video Installation



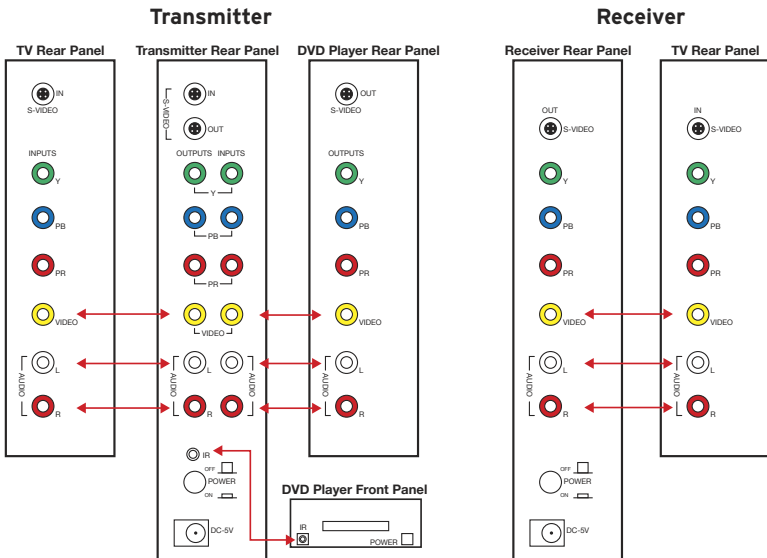
# Installation Using Local Display

## Cable Connections for S-Video Installation

PureAV RemoteTV



## Cable Connections for Composite Video Installation

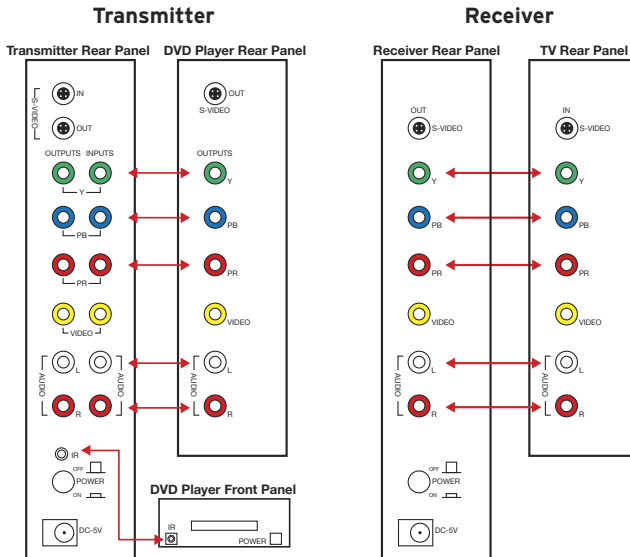


# Installation without Local Display

Here are several examples illustrating how to connect the PureAV RemoteTV using a source device and one display in another location.

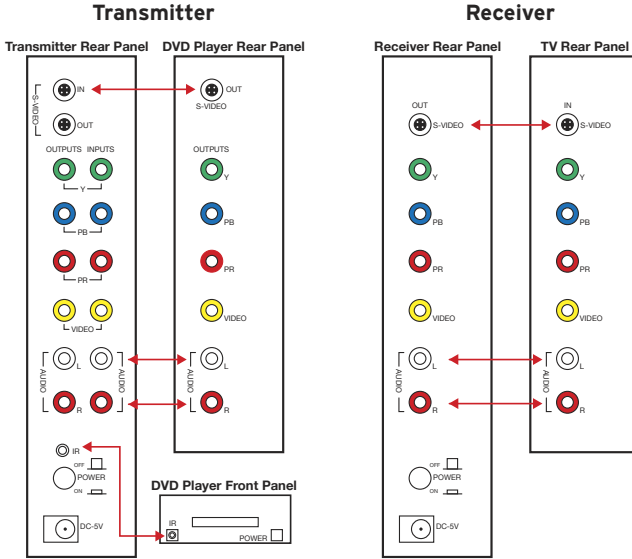


## Cable Connections for Component Video Installation

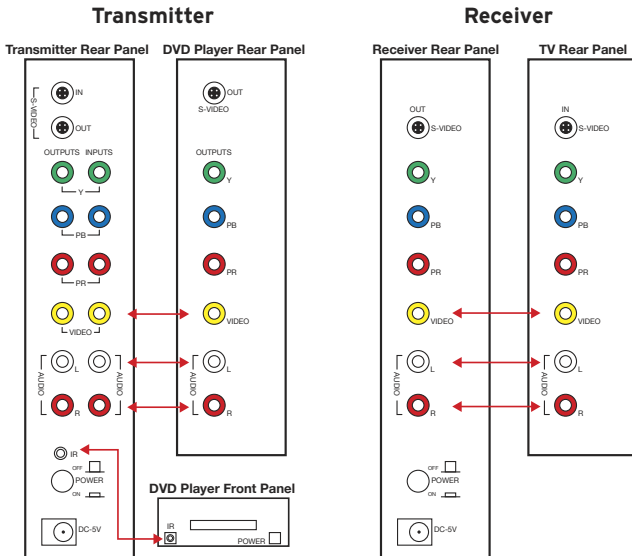


# Installation Without Local Display

## Cable Connections for S-Video and RCA Installation



## Cable Connections for Composite Video Installation



# Installation

Follow the steps below to begin using the PureAV RemoteTV.

1. Connect your audio and video cables to the appropriate ports of the PureAV RemoteTV Transmitter (the Transmitter) and the PureAV RemoteTV Receiver (the Receiver) as illustrated in the previous pages.
2. Plug the IR adapter into the IR port located on the rear panel of the Transmitter and place the head near the IR port of the source device as illustrated in the previous pages (TV, DVD player, VCR, etc.) (This allows you to control the functions of the source device through the Receiver using the source device's remote control).
3. Plug in the power supplies of both the Transmitter and Receiver, and then turn each unit on.
4. Check the status LEDs on the Transmitter and Receiver. If the LINK LED on both the Transmitter and Receiver are green, the wireless connection has been established and the setup procedures are complete.

Label	LED	Status
POWER	Green	Device plugged in
LINK	Orange	Initializing
	Orange-Blinking	Signal survey
	Green	Connected
	Red	No signal
VIDEO SOURCE		This button is used to switch the input mode. The default mode is composite video.

5. Turn on the source device (DVD player, VCR, etc.) Turn on the remote device (TV or other display).
6. Each time the Receiver is turned on, it will default to composite-video mode. If you are using s-video or component video cables, press the "Video Source" button to cycle through the available video modes (composite, component, or s-video).

**Note:** Be sure that you are aware which set of AV inputs you used when connecting the Receiver to the TV or other display. (Most TVs and video displays are equipped with multiple audio video inputs, i.e., AV1, AV2, etc.) It will be necessary to select the same AV input mode using your display's remote control. Refer to your display's user manual to configure this setting.

# Frequently Asked Questions

## **What should I do if the LINK LED on both the RemoteTV Transmitter and RemoteTV Receiver are green, but no video is displayed on my TV?**

1. Make sure your TV or video display is set to the correct AV input mode. Consult your display's user manual for information.
2. Make sure that the Receiver is set to the correct video input mode. For example, if you are using an s-video cable for video input, press the "Video" button on front of the Receiver until "S-Video" is displayed on your TV or video-display screen.

## **What if the PureAV RemoteTV is not working properly at the advertised distance?**

Since the built-in antennas are directional in nature, it may be necessary to reorient the position of the RemoteTV Receiver and/or RemoteTV Transmitter.

## **Is the PureAV RemoteTV compatible with high-definition television (HDTV) broadcasts, or with my HDTV cable box?**

The PureAV RemoteTV is only compatible with standard-definition (SD) broadcast and cable signals.

## **Can I watch two different programs on the two TVs that are connected to the RemoteTV device?**

No. If the primary TV is connected to the RemoteTV Transmitter, the secondary TV, which is connected to the RemoteTV Receiver, will display the same video program.

## **Can I purchase an extra RemoteTV Receiver to connect multiple displays to the same source?**

No, currently only one RemoteTV transmitter can be connected to one RemoteTV Receiver.

## **What type of security measures does the PureAV RemoteTV provide?**

Link-layer authentication, encryption, and access control are built-in to ensure the privacy of the content viewed. Encryption is provided by 3DES, and authentication through RSA and X509 signatures. Host-layer protocols such as EAPOL Kerberos and pre-shared key methods are supported.

## **Does the PureAV RemoteTV interoperate with IEEE 802.11a?**

No. Because the MAC layers are fundamentally different, the two systems do not communicate or interoperate with each other.

## **Does the PureAV RemoteTV interfere with IEEE 802.11a?**

No, the PureAV RemoteTV has built-in DFS (Dynamic Frequency Selection) capabilities and avoids RF channels that are occupied by other networks.

# Specifications

## General

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- |              |  |
|--------------|--|
| <b>Audio</b> | <ul style="list-style-type: none"><li>• Analog stereo (L+R)</li></ul>  |
| <b>Video</b> | <ul style="list-style-type: none"><li>• MPEG-2 (encoding), full D1 resolution (480 lines, interlaced)</li><li>• Luminance and chrominance signal processing for NTSC</li><li>• Video input: Composite (CVBS), S-video (Y/C), and Component (YPrPb)</li></ul> |

## RF Information

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- |                                |  |
|--------------------------------|--|
| <b>Frequency Band</b>          | <ul style="list-style-type: none"><li>• 5GHz U-NII frequency band, unlicensed</li></ul>  |
| <b>Output Power</b>            | <ul style="list-style-type: none"><li>• 31.6mW (15 dBm)</li></ul>  |
| <b>Nominal Operating Range</b> | <ul style="list-style-type: none"><li>• Up to 350 ft. or 106m (subject to change due to environment)</li></ul>                     |
| <b>MAC Layer</b>               | <ul style="list-style-type: none"><li>• 3DES link-layer encryption with pre-shared secret key</li><li>• Dynamic TDMA/TDD</li></ul> |
| <b>Modulation Technology</b>   | <ul style="list-style-type: none"><li>• Orthogonal Frequency Division Multiplexing (OFDM)</li></ul>                                |

## Physical

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- |                    |   |
|--------------------|---|
| <b>LED</b>         | <ul style="list-style-type: none"><li>• Power, LINK connection</li></ul>        |
| <b>Unit Weight</b> | <ul style="list-style-type: none"><li>• 350g</li></ul>                          |
| <b>Dimensions</b>  | <ul style="list-style-type: none"><li>• 16cm X 13cm X 5cm (W x H x D)</li></ul> |

## Environmental

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- |                                  |   |
|----------------------------------|---|
| <b>Temperature Range</b>         | <ul style="list-style-type: none"><li>• 0° C to 40° C - Operating</li><li>• 0° C to 70° C - Storage</li></ul> |
| <b>Humidity (non-condensing)</b> | <ul style="list-style-type: none"><li>• 5%~90% Typical</li></ul>  |

# PureAV Power Protection

The PureAV power-protection line improves your home theater experience by eliminating problems before they reach your equipment and enables you to enjoy the clearest picture and cleanest sound possible from your home theater system. PureAV power solutions are designed to effectively clean and organize the AC power that is connected to your home theater system while protecting your valuable equipment from harmful power disturbances. Using advanced design elements and top-quality construction as well as superior circuitry, PureAV power solutions offer the most complete protection from power surges, AC contamination, and spikes. The Silver Series Power Consoles are designed to fit perfectly in your home theater system or mount on a professional AV rack, adding a level of integrated organization and sophistication to your system.



AP41300-12

## Power Consoles

The PureAV Power Consoles integrate Multi-Phase PureFilter™ Circuitry and Advanced Overvoltage Protection into an elegantly designed console that delivers the clearest picture and cleanest sound to your home theater system or high-end audio equipment. The Power Console is designed to fit perfectly in your home theater system or mount on a professional AV rack.



AP11201-12

## Power Conditioners

PureAV Power Conditioners combine Multi-Phase PureFilter Circuitry with Advanced Overvoltage Protection to isolate and eliminate line noise generated by digital components and external sources such as household appliances. The innovative, low-profile design allows for easy mounting on walls or furniture.



F9A1033-12

## Isolators

The PureAV Home Theater Surge Protectors with advanced Isolator Technology use a series of filters to isolate the outlet banks, contain power line noise, and deliver pure, clean power to your sensitive home theater and audio equipment. The heavy-metal construction and high level of surge protection ensures that your system will survive most dangerous power disturbances.



F9A923-08

## Surge Protectors

Home Theater Surge Protectors with Power Filter Technology clean the electricity in your home by removing power spikes, surges, and interference from your AC power and delivers clean, clear and safe power to all of your sensitive home theater and audio equipment.



# Information

## Belkin Corporation Limited Lifetime Product Warranty

Belkin Corporation warrants this product against defects in materials and workmanship for its lifetime. If a defect is discovered, Belkin will, at its option, repair or replace the product at no charge provided it is returned during the warranty period, with transportation charges prepaid, to the authorized Belkin dealer from whom you purchased the product. Proof of purchase may be required.

This warranty does not apply if the product has been damaged by accident, abuse, misuse, or misapplication; if the product has been modified without the written permission of Belkin; or if any Belkin serial number has been removed or defaced.

THE WARRANTY AND REMEDIES SET FORTH ABOVE ARE EXCLUSIVE IN LIEU OF ALL OTHERS, WHETHER ORAL OR WRITTEN, EXPRESSED OR IMPLIED. BELKIN SPECIFICALLY DISCLAIMS ANY AND ALL IMPLIED WARRANTIES, INCLUDING, WITHOUT LIMITATION, WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

No Belkin dealer, agent, or employee is authorized to make any modification, extension, or addition to this warranty.

BELKIN IS NOT RESPONSIBLE FOR SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES RESULTING FROM ANY BREACH OF WARRANTY, OR UNDER ANY OTHER LEGAL THEORY, INCLUDING BUT NOT LIMITED TO, LOST PROFITS, DOWNTIME, GOODWILL, DAMAGE TO OR REPROGRAMMING OR REPRODUCING ANY PROGRAM OR DATA STORED IN, OR USED WITH, BELKIN PRODUCTS.

Some states do not allow the exclusion or limitation of incidental or consequential damages or exclusions of implied warranties, so the above limitations or exclusions may not apply to you. This warranty gives you specific legal rights, and you may also have other rights that vary from state to state.

# Information

## FCC Statement

### **DECLARATION OF CONFORMITY WITH FCC RULES FOR ELECTROMAGNETIC COMPATIBILITY**

We, Belkin Corporation, of 501 West Walnut Street, Compton, CA 90220, declare under our sole responsibility that the product,

AV55000

to which this declaration relates, 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.

### **Caution: Exposure to Radio Frequency Radiation.**

The radiated output power of this device is far below the FCC radio frequency exposure limits. Nevertheless, the device shall be used in such manner that the potential for human contact during normal operation is minimized. When connecting an external antenna to the device, the antenna shall be placed in such a manner to minimize the potential for human contact during normal operation. In order to avoid the possibility of exceeding the FCC radio frequency exposure limits, human proximity to the antenna shall not be less than 20cm (8 inches) during normal operation.

### **Federal Communications Commission Notice**

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses, and can radiate radio frequency energy. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try and correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the distance between the equipment and the receiver.
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

### **Modifications**

The FCC requires the user to be notified that any changes or modifications to this device that are not expressly approved by Belkin Corporation may void the user's authority to operate the equipment.

# Information

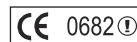
## Canada Industry Canada (IC)

The wireless radio of this device complies with RSS 139 & RSS 210 Industry Canada. This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe B conforme á la norme NMB-003 du Canada.

## Europe-European Union Notice

Radio products with the CE 0682 or CE alert marking comply with the R&TTE Directive (1995/5/EC) issued by the Commission of the European Community.



Compliance with this directive implies conformity to the following European Norms (in brackets are the equivalent international standards).

- EN 60950 (IEC60950) - Product Safety
- EN 300 328 Technical requirement for radio equipment
- ETS 300 826 General EMC requirements for radio equipment.

To determine the type of transmitter, check the identification label on your Belkin product.



Products with the CE marking comply with the EMC Directive (89/336/EEC) and the Low Voltage Directive (72/23/EEC) issued by the Commission of the European Community. Compliance with these directives implies conformity to the following European Norms (in brackets are the equivalent international standards).



- EN 55022 (CISPR 22) - Electromagnetic Interference
- EN 55024 (IEC61000-4-2,3,4,5,6,8,11)- Electromagnetic Immunity
- EN 61000-3-2 (IEC610000-3-2) - Power Line Harmonics
- EN 61000-3-3 (IEC610000) - Power Line Flicker
- EN 60950 (IEC60950) - Product Safety

Products that contain the radio transmitter are labeled with CE 0682 or CE alert marking and may also carry the CE logo.

**This device is intended only for OEM integrators under the following conditions:**

- 1) The antenna must be installed such that 20 cm is maintained between the antenna and users, and
- 2) The transmitter module may not be co-located with any other transmitter or antenna, and
- 3) The antenna should be integral if the end device is intended to be operated in 5.15 ~ 5.25GHz frequency range.

As long as 3 conditions above are met, further transmitter test will not be required. However, the OEM integrator is still responsible for testing their end-product for any additional compliance requirements required with this module installed (for example, digital device emissions, PC peripheral requirements, etc.).

**IMPORTANT NOTE:** In the event that these conditions can not be met (for example certain laptop configurations or co-location with another transmitter), then the FCC authorization is no longer considered valid and the FCC ID can not be used on the final product. In these circumstances, the OEM integrator will be responsible for re-evaluating the end product (including the transmitter) and obtaining a separate FCC authorization.

**End Product Labeling**

This transmitter module is authorized only for use in device where the antenna may be installed such that 20 cm may be maintained between the antenna and users (for example :TV adapter..etc.). The final end product must be labeled in a visible area with the following: "Contains TX FCC ID: K7SAV55000".

**Manual Information That Must be Included**

The OEM integrator has to be aware not to provide information to the end user regarding how to install or remove this RF module in the users manual of the end product which integrate this module.

The users manual for end users must include the following information in a prominent location " IMPORTANT NOTE: To comply with FCC RF exposure compliance requirements, the antenna used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter" . If the end product integrating this module is going to be operated in 5.15 ~ 5.25GHz frequency range, the warning statement in the user manual of the end product should include the restriction of operating this device in indoor could void the user's authority to operate the equipment.

**BELKIN.**  
pureav.com

**Belkin Corporation**  
501 West Walnut Street  
Compton • CA • 90220 • USA  
Tel: 310.898.1100  
Fax: 310.898.1111

**Belkin Ltd.**  
Express Business Park • Sipton Way  
Rushden • NN10 6GL • United Kingdom  
Tel: +44 (0) 1933 35 2000  
Fax: +44 (0) 1933 31 2000

**Belkin B.V.**  
Boeing Avenue 333  
1119 PH Schiphol-Rijk • The Netherlands  
Tel: +31 (0) 20 654 7300  
Fax: +31 (0) 20 654 7349

**Belkin Ltd.**  
7 Bowen Crescent • West Gosford  
NSW 2250 • Australia  
Tel: +61 (0) 2 4372 8600  
Fax: +61 (0) 2 4372 8603

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