

## Cisco VEN401 plus VEN402 Wireless Bridge Solution Optimized for Video

### Highlights

- Adds Wireless-N network connectivity between any Game Consoles, Digital Video Recorders (DVRs), and Digital Media Adapters (DMAs) and the customers Broadband Residential Gateway
- Complies with IEEE 802.11n draft 2.0 (5 GHz) standards
- Wi-Fi certified to ensure interoperability
- Industrial-strength wireless encryption WPA2™ to ensure security
- Easy-to-use Wi-Fi Protected Setup (WPS) for fast, simple and secured setup
- The VEN401 Access Point provides multiple SSIDs to VLAN pairings so that parents can control the content that a TV has access to
- Equipped with one 10/100 Base-T auto-crossover (MDI/MDI-X) port
- Works without drivers on Windows®, Macintosh®, Linux®-based devices— it just needs an Ethernet port to connect with!
- The VEN401 (Access Point) plus VEN402 (Client) are available as a pre-configured bundle and packaged together

### Optimized for Video

Cisco's VEN401 plus VEN402 Wireless Video Bridge solution is optimized for connecting Video devices within the Connected Home without the need for wires. Users are now free to place their Televisions and video devices most anywhere in the home that compliments their lifestyle and living environment. The small form factor and unique design of the VEN401 plus VEN402 provides a stylish solution without the need to pull wires through walls or along the floor board. By pairing the two devices in the 5GHz band, the video stream is able to pass between the two devices at a frequency that is minimally used by any other devices. It's also ideal for wirelessly sharing music, photos, movies, and other files around the home.

Since the Wireless Video Bridge solution is based on IEEE802.11n standards-based Wi-Fi technology, it can pair with other video products that support the same Wi-Fi standard. Additionally, the VEN401 plus VEN402 pair can also be used to connect digital video recorders, set-top boxes or computers to your Wireless-N network. One can replace their wired-Ethernet connections for printers, scanners, cameras, storage devices, notebooks or desktop computers to wireless connections or add the devices wirelessly to their existing network.

Cisco's VEN401 plus VEN402 Wireless Video Bridge solution works with any platform and under any operating system. Through use of the Wi-Fi Protected

Setup™ secure connections are created with a simple push of a button. Additionally, the connection is protected with encrypted, industrial-strength Wi-Fi Protected Access (WPA) security to ensure that ones personal content is protected from unauthorized access methods. Each Wireless Video Bridge bundle is pre-configured at the factory with a unique set of Wi-Fi Security settings including, SSID, WPA2 Pre-Shared Key and WPS Pin. This unique framework provides a positive, Zero-Touch, out-of –the-box experience for the customer and avoids the need for manual configuration.

For the Service Provider, the VEN401 plus VEN402 Wireless Video Bridge solution can be remotely managed, provisioned and have its in-service software upgraded using TR-069 and TR-111. For mass deployments, provisioning with a secure profile saves time and expense when globally updating configurations. Cisco understands that security is fundamental for a solid, carrier-grade service. The platform supports secure, methods for remote communication, provisioning and servicing.

To facilitate in-home customization and troubleshooting the VEN401 plus VEN402 Wireless Video Bridge solution includes a browser-based user interface. The browser-based user interface allows customers to customize their WiFi security and access other configurable features. In addition, the LED status indicators on the front panel provide an informative and easy-to-understand display that indicates status and real-time data transmission activity. The LED indicators include:

- Power
- Ethernet
- Wireless
- WPS



Figure 1. VEN401 Wireless Access Point



Figure 2. VEN402 Wireless Client

Table 1. Hardware Features

Feature	Description
Processor	Broadcom 4717 (enhanced)
Memory	8 Mb Flash, 32 Mb DRAM DDR2
Wi-Fi	IEEE 802.11n 5GHz Draft 2.0
Wi-Fi Antenna	2x3 PiFa and Internal Omni Directional antenna's
Ethernet Interfaces	1x 10/100 Base-T Ethernet
Industrial Design	Custom ID with added option for Optical Interface and Fiber splice tray

Table 2. Front Panel Features

Feature	Description
Controls	WPS WiFi Security
Indicators	Power, Ethernet, Wireless, WPS

Table 3. Back Panel Features

Feature	Description
Power	External 12 VDC Power Supply
Controls	Power Switch (On/Off), Reset
Connectors	RJ-45 for 10/100 Base-T Ethernet

## Product Specifications

**Table 4.** Product Specifications

Specification	Value
<b>Interfaces</b>	
Wi-Fi	<ul style="list-style-type: none"> <li>• IEEE 802.11n 5GHz only, Draft 2.0</li> <li>• 802.1x Authentication</li> <li>• WPA/WPA2 Protected Access</li> <li>• 64/128 Bits WEP Encryption</li> <li>• AES and TKIP Encryption</li> <li>• Wi-Fi Multimedia Support: WMM and WMM-PS</li> <li>• Multiple SSIDs Profiles</li> <li>• MAC Address Filtering Integrated</li> <li>• WPS (Pushbutton and PIN entry)</li> <li>• Modulations: OFDM/BPSK, QPSK, 16-QAM, 64-QAM</li> <li>• RF Power (EIRP): 100 mWatt (20 dBm) to each transmit antenna</li> <li>• Receive Sensitivity: -72dBm (typical) @ MCS15/5.0GHz</li> <li>• Antenna Gain: 1 dBi</li> </ul>
<b>Networking</b>	
Bridging	<ul style="list-style-type: none"> <li>• Transparent Bridging between LAN Devices</li> <li>• Virtual LAN Bridging (VLAN): 802.1P, 802.1Q</li> <li>• MAC Filtering</li> <li>• IGMPv3 Snooping</li> <li>• IP Multicast forwarding</li> <li>• DHCP Client</li> </ul>
QoS	<ul style="list-style-type: none"> <li>• IEEE 802.1p—Priority Bits</li> <li>• IEEE 802.1q—VLAN Tagging</li> <li>• 802.11e Wireless QoS</li> </ul>
Management	<ul style="list-style-type: none"> <li>• 802.1ag Connection Fault Management (CFM)</li> <li>• DSL Forum TR-069 plus TR-111 Remote Management</li> <li>• Supports TR-098 Data Model and Cisco Extension</li> <li>• HTTPS for remote access to Statistics</li> <li>• Integrated Gateway-based Diagnostics</li> <li>• DNS/IP Ping and Traceroute</li> <li>• Web-UI Configuration and Diagnostics</li> <li>• Statistic reporting</li> </ul>
Bridging Routing	<ul style="list-style-type: none"> <li>• IPv4, UDP, TCP</li> <li>• UPnP-based Auto-Configuration and Port Forwarding</li> </ul>
Security	<ul style="list-style-type: none"> <li>• WEP, WPA, WPA2 and MAC Filtering Security Features</li> <li>• MAC Filtering Black List</li> </ul>
<b>Device Characteristics</b>	
Power	110-240 VAC 50/60 Hz Switching Power Supply; 12 VDC, 1 A Output
Mounting	Desktop and Wall Mount
Dimensions (H x W x D)	Target : 5.71 in. x 4.7 in. x 2.05 in. (145mm x 106mm x 52mm) maximum
Weight	Target : 5.61 oz. (159 g)
<b>Safety and Emissions</b>	
Certification	FCC Part 68, Part 15, Class B & C and European EMC and Immunity, UL 1950, CSA C22.2 no. 234 and EN 60950-1- 2006 CE, RoHS, WEEE and GrunePunkte
<b>Operating Conditions</b>	
Operating Temperature	32° to 104°F (0° to 40°C)
Storage Temperature	-4° to 140°F (-20° to 60°C)
Operating Humidity	10 to 90% Non-condensing
Storage Humidity	10 to 90% Non-condensing

**Table 5.** Packaging Contents

- Wireless Video Bridge Access Point (Connects to a RGW)
- Wireless Video Bridge Client (Connects to a STB, DVR, etc.)
- Qty. 2 Power adaptors
- Qty. 2 Ethernet network cables
- Printed FAQ
- Printed Quick Install Guide
- CD: User Manual, OS/GPL and Software license declarations and DOC

**Table 6.** Minimum Installation Requirements

- Wireless A Residential Gateway device with a spare Ethernet Port
- Wireless Set Top Box, DVR, etc. with an Ethernet Port
- Internet Explorer 6 or Firefox 2 or higher for browser-based configuration

The maximum performance for wireless is derived from IEEE Standard 802.11 specifications. Actual performance can vary, including lower wireless network capacity, data throughput rate, range and coverage. Performance depends on many factors, conditions and variables, including distance from the access point, volume of network traffic, building materials and construction, operating system used, mix of wireless products used, interference and other adverse conditions.



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Service Provider Video Technology Group  
1-800-722-2009 or 678-277-1120

[www.cisco.com](http://www.cisco.com)

November 2009

## **Federal Communication Commission Interference Statement**

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 and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. 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 to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into 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.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

For operation within 5.15 ~ 5.25GHz frequency range, it is restricted to indoor environment.

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.

### **IMPORTANT NOTE:**

#### **FCC Radiation Exposure Statement:**

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

The availability of some specific channels and/or operational frequency bands are country dependent and are firmware programmed at the factory to match the intended destination. The firmware setting is not accessible by the end user.

**VEN401-AT** and **VEN401-NA** with PIFA antenna and max. antenna gain is 3.9 dBi in 2.4G and 4.5dBi in 5G.

**Industry Canada statement:**

This device complies with RSS-210 of the Industry Canada 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:**

The device for the band 5150-5250 MHz is only for indoor usage to reduce potential for harmful interference to co-channel mobile satellite systems.

The maximum antenna gain permitted (for devices in the bands 5250-5725 MHz (4.3 dBi) to comply with the e.i.r.p. limit; and

The maximum antenna gain permitted (for devices in the band 5725-5825 MHz (4.5dBi)) to comply with the e.i.r.p. limits specified for point-to-point and non point-to-point operation as appropriate, as stated in section A9.2(3).

High power radars are allocated as primary users (meaning they have priority) of 5250-5350 MHz and 5650-5850 MHz and these radars could cause interference and/or damage to LE-LAN devices.

**IMPORTANT NOTE:****Canada Radiation Exposure Statement:**

This equipment complies with Canada radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator and your body.

**Note: The VEN401-AT and VEN401-NA have disabled the 5600-5650M band by S/W to avoid 5600-5650M band for IC certification.**

## Europe – EU Declaration of Conformity

This device complies with the essential requirements of the R&TTE Directive 1999/5/EC. The following test methods have been applied in order to prove presumption of conformity with the essential requirements of the R&TTE Directive 1999/5/EC:

- **EN60950-1: (2006)**  
Safety of Information Technology Equipment
- **EN50385 : (2002-08)**  
Product standard to demonstrate the compliance of radio base stations and fixed terminal stations for wireless telecommunication systems with the basic restrictions or the reference levels related to human exposure to radio frequency electromagnetic fields (110MHz - 40 GHz) - General public
- **EN 300 328 V1.7.1: (2006-10)**  
Electromagnetic compatibility and Radio spectrum Matters (ERM); Wideband Transmission systems; Data transmission equipment operating in the 2,4 GHz ISM band and using spread spectrum modulation techniques; Harmonized EN covering essential requirements under article 3.2 of the R&TTE Directive
- **EN 301 893 V1.5.1: (2008-12)**  
Broadband Radio Access Networks (BRAN); 5 GHz high performance RLAN; Harmonized EN covering the essential requirements of article 3.2 of the R&TTE Directive
- **EN 301 489-1 V1.8.1: (2008-04)**  
Electromagnetic compatibility and Radio Spectrum Matters (ERM); ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 1: Common technical requirements
- **EN 301 489-17 V2.1.1 (2009-05)**  
Electromagnetic compatibility and Radio spectrum Matters (ERM); ElectroMagnetic Compatibility (EMC) standard for radio equipment; Part 17: Specific conditions for Broadband Data Transmission Systems

This device is a 2.4 GHz wideband transmission system (transceiver), intended for use in all EU member states and EFTA countries, except in France and Italy where restrictive use applies.

In Italy the end-user should apply for a license at the national spectrum authorities in order to obtain authorization to use the device for setting up outdoor radio links and/or for supplying public access to telecommunications and/or network services.

This device may not be used for setting up outdoor radio links in France and in some areas the RF output power may be limited to 10 mW EIRP in the frequency range of 2454 – 2483.5 MHz. For detailed information the end-user should contact the national spectrum authority in France.



# CE 0560

[cs] Český [Czech]	[ <i>Jméno výrobce</i> ] tímto prohlašuje, že tento [ <i>typ zařízení</i> ] je ve shodě se základními požadavky a dalšími příslušnými ustanoveními směrnice 1999/5/ES.
[da] Dansk [Danish]	Undertegnede [ <i>fabrikantens navn</i> ] erklærer herved, at følgende udstyr [ <i>udstyrets typebetegnelse</i> ] overholder de væsentlige krav og øvrige relevante krav i direktiv 1999/5/EF.
[de] Deutsch [German]	Hiermit erkläre [ <i>Name des Herstellers</i> ], dass sich das Gerät [ <i>Gerätetyp</i> ] in Übereinstimmung mit den grundlegenden Anforderungen und den übrigen einschlägigen Bestimmungen der Richtlinie 1999/5/EG befindet.
[et] Eesti [Estonian]	Käesolevaga kinnitab [ <i>tootja nimi = name of manufacturer</i> ] seadme [ <i>seadme tüüp = type of equipment</i> ] vastavust direktiivi 1999/5/EÜ põhinõuetele ja nimetatud direktiivist tulenevatele teistele asjakohastele sätetele.
[en] English	Hereby, [ <i>name of manufacturer</i> ], declares that this [ <i>type of equipment</i> ] is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.
[es] Español [Spanish]	Por medio de la presente [ <i>nombre del fabricante</i> ] declara que el [ <i>clase de equipo</i> ] cumple con los requisitos esenciales y cualesquiera otras disposiciones aplicables o exigibles de la Directiva 1999/5/CE.
[el] Ελληνική [Greek]	ΜΕ ΤΗΝ ΠΑΡΟΥΣΑ [ <i>name of manufacturer</i> ] ΔΗΛΩΝΕΙ ΟΤΙ [ <i>type of equipment</i> ] ΣΥΜΜΟΡΦΩΝΕΤΑΙ ΠΡΟΣ ΤΙΣ ΟΥΣΙΩΔΕΙΣ ΑΠΑΙΤΗΣΕΙΣ ΚΑΙ ΤΙΣ ΛΟΙΠΕΣ ΣΧΕΤΙΚΕΣ ΔΙΑΤΑΞΕΙΣ ΤΗΣ ΟΔΗΓΙΑΣ 1999/5/ΕΚ.
[fr] Français [French]	Par la présente [ <i>nom du fabricant</i> ] déclare que l'appareil [ <i>type d'appareil</i> ] est conforme aux exigences essentielles et aux autres dispositions pertinentes de la directive 1999/5/CE.
[it] Italiano [Italian]	Con la presente [ <i>nome del costruttore</i> ] dichiara che questo [ <i>tipo di apparecchio</i> ] è conforme ai requisiti essenziali ed alle altre disposizioni pertinenti stabilite dalla direttiva 1999/5/CE.
Latviski [Latvian]	Ar šo [ <i>name of manufacturer / izgatavotāja nosaukums</i> ] deklarē, ka [ <i>type of equipment / iekārtas tips</i> ] atbilst Direktīvas 1999/5/EK būtiskajām prasībām un citiem ar to saistītajiem noteikumiem.
Lietuvių [Lithuanian]	Šiuo [ <i>manufacturer name</i> ] deklaruoją, kad šis [ <i>equipment type</i> ] atitinka esminius reikalavimus ir kitas 1999/5/EB Direktyvos nuostatas.
[nl] Nederlands [Dutch]	Hierbij verklaart [ <i>naam van de fabrikant</i> ] dat het toestel [ <i>type van toestel</i> ] in overeenstemming is met de essentiële eisen en de andere relevante bepalingen van richtlijn 1999/5/EG.
[mt] Malti [Maltese]	Hawnhekk, [ <i>isem tal-manifattur</i> ], jiddikjara li dan [ <i>il-mudel tal-prodott</i> ] jikkonforma mal-htigijiet essenzjali u ma provvedimenti oħrajn relevanti li hemm fid-Dirrettiva 1999/5/EC.
[hu] Magyar [Hungarian]	Alulírott, [ <i>gyártó neve</i> ] nyilatkozom, hogy a [ <i>... típus</i> ] megfelel a vonatkozó alapvető követelményeknek és az 1999/5/EC irányelv egyéb előírásainak.
[pl] Polski [Polish]	Niniejszym [ <i>nazwa producenta</i> ] oświadczam, że [ <i>nazwa wyrobu</i> ] jest zgodny z zasadniczymi wymogami oraz pozostałymi stosownymi postanowieniami Dyrektywy 1999/5/EC.
[pt] Português [Portuguese]	[ <i>Nome do fabricante</i> ] declara que este [ <i>tipo de equipamento</i> ] está conforme com os requisitos essenciais e outras disposições da Directiva 1999/5/CE.
[sl] Slovensko [Slovenian]	[ <i>Ime proizvajalca</i> ] izjavlja, da je ta [ <i>tip opreme</i> ] v skladu z bistvenimi zahtevami in ostalimi relevantnimi določili direktive 1999/5/ES.
Slovensky [Slovak]	[ <i>Meno výrobcu</i> ] týmto vyhlasuje, že [ <i>typ zariadenia</i> ] spĺňa základné požiadavky a všetky príslušné ustanovenia Smernice 1999/5/ES.
[fi] Suomi [Finnish]	[ <i>Valmistaja = manufacturer</i> ] vakuuttaa täten että [ <i>type of equipment = laitteen tyyppimerkintä</i> ] tyyppinen laite on direktiivin 1999/5/EY oleellisten vaatimusten ja sitä koskevien direktiivin muiden ehtojen mukainen.
[sv] Svenska [Swedish]	Härmed intygar [ <i>företag</i> ] att denna [ <i>utrustningstyp</i> ] står i överensstämmelse med de väsentliga egenskapskrav och övriga relevanta bestämmelser som framgår av direktiv 1999/5/EG.