

WI-FI MESH POINT



ARRIS Space Connect VAP4641

Advanced Setup

version 8.25



VAP4641 Wireless Mesh Point

Advanced Setup - ARRIS Space Connect VAP4641 (v8.25)

OPEN SOURCE SOFTWARE AND LICENSES

For instructions on how to obtain a copy of any source code being made publicly available by ARRIS related to software used in this ARRIS product you may send your request in writing to: ARRIS, Software Pedigree Operations, 2450 Walsh Avenue, Santa Clara, CA 95051, USA. The ARRIS website opensource.arris.com also contains information regarding use of open source. ARRIS has created opensource.arris.com to serve as a portal for interaction with the software community-at-large.

Restrictions on Use of Wireless Devices

- In some situations or environments, the use of wireless devices may be restricted by the proprietor of the building or responsible representatives of the organization. For example, using wireless equipment in any environment where the risk of interference to other devices or services is perceived or identified as harmful.
- If you are uncertain of the applicable policy for the use of wireless equipment in a specific organization or environment, you are encouraged to ask for authorization to use the device prior to turning on the equipment.
- The manufacturer is not responsible for any radio or television interference caused by unauthorized modification of the devices included with this product, or the substitution or attachment of connecting cables and equipment other than specified by the manufacturer. Correction of interference caused by such unauthorized modification, substitution, or attachment is the responsibility of the user.
- The manufacturer and its authorized resellers or distributors are not liable for any damage or violation of government regulations that may arise from failing to comply with these guidelines.

CAUTION:

ENVIRONMENT:

- The Mesh Point needs air flow to keep cool. Do not block or cover the ventilation holes of the Mesh Point. Leave a gap of at least 10cm above and around the Mesh Point to allow for adequate ventilation.
- Do not operate your Mesh Point in an unventilated cabinet or on top of another unit that emits heat, such as a TV or media player.
- Do not store the Mesh Point in hot, damp, dusty, or unusually cold locations.
- The Mesh Point is intended for indoor use and installation only.

HANDLING:

- Do not put anything on or over your Mesh Point which might drip or spill on it.
- Never place an open flame, such as from a lit candle, near the Mesh Point's ventilation holes.

STORAGE:

- Store your Mesh Point in a cool, dry place. Before installation and use, let the Mesh Point reach room temperature.

No part of this manual may not be copied, reproduced, transmitted, transcribed or translated into any language without permission. Space Television reserves the right to change the specifications of the hardware and software described in these manuals at any time. Space Television cannot be held liable for any damages resulting from the use of this product. Specifications are subject to change without notice.

© Space Television - 78 Republic Road, Ferndale, Randburg, Johannesburg, 2125
PO Box 9317, Johannesburg 2000
T 0861 40 41 42
email sales@spacetv.co.za
www.spacetv.co.za

VAP4641 Wireless Mesh Point

Advanced Setup - ARRIS Space Connect VAP4641 (v8.25)

CONTENTS:

1. ACCESS POINT MODE.
2. WIRELESS EXTENDER MODE – WPS PROCEDURE.
3. WIRELESS EXTENDER MODE – MANUAL SETUP.
4. UPDATING SSID AND PASSWORD.
5. CONNECTING YOUR HOME DEVICE TO THE ARRIS SPACE CONNECT VAP4641 WPS PUSH BUTTON PROCEDURE.
6. CONNECTING YOUR HOME DEVICE TO THE ARRIS SPACE CONNECT VAP4641 MANUAL SETUP.
7. HOW TO CONNECT TO THE GRAPIC USER INTERFACE (WIRED)
8. HOW TO MANUALLY FIX OPERATIONAL MODE
9. HOW TO SET THE HOME NETWORK OPERATIONAL MODE
10. HOW TO SETUP MESH NETWORKING
11. HOW TO CHANGE THE STATIC IP ADDRESS OF THE ARRIS SPACE CONNECT VAP4641
12. HOW TO CHECK THE FIRMWARE VERSION
13. HOW TO RESET YOUR CONFIGURATION TO DEFAULT SETTINGS

VAP4641 Wireless Mesh Point

Advanced Setup - ARRIS Space Connect VAP4641 (v8.25)

1. ACCESS POINT MODE

- Connect your ARRIS Space Connect VAP4641 to your home gateway with an Ethernet cable.
- Power up your ARRIS Space Connect VAP4641 using the power switch located on the right side of the casing. Wait for the LED located on the front side to become solid state on.

LED COLOUR	ETHERNET CONNECT	CONNECTION QUALITY
Solid Green	1 Gbps	Good
Solid Amber	100 Mbps	Limited
Solid Red	10 Mbps	Bad
Blinking Green	No connection	None

2. WIRELESS EXTENDER MODE - WPS PROCEDURE

Prerequisite

- Your gateway must broadcast a Wi-Fi Access Point on the 5 GHz band
- Your gateway must have Wireless Protected Setup (WPS) enabled
- If your Gateway/Router is Home Assured. Do not connect your ARRIS Space Connect VAP4641 to your gateway through Ethernet
- Select a location in your home where your ARRIS Space Connect VAP4641 can better extend your wireless coverage
- Power up your ARRIS Space Connect VAP4641 and wait for the LED state to become Blinking Green Slow
- Press the WPS button on your gateway
- Press the WPS button on the ARRIS Space Connect VAP4641. The LED is starting to blink Amber
- Wait for the ARRIS Space Connect VAP4641 LED to change state according to table below
- LED indicator behavior during the WPS procedure is explained in section 4.

LED COLOUR	DISTANCE FROM THE GATEWAY (SIGNAL STRENGTH)	CONNECTION QUALITY
Solid Green	Correct range	Good
Blinking Green/Amber	Close	Medium
Solid Amber	Far	Medium
Solid Red	Too far	Poor

VAP4641 Wireless Mesh Point

Advanced Setup - ARRIS Space Connect VAP4641 (v8.25)

3. WIRELESS EXTENDER MODE - MANUAL SETUP (Backhaul)

Manual setup is necessary when:

- The WPS push button procedure described in section 2 is not successful or
- Your gateway does not provide the WPS functionality

Prerequisite:

- Do not connect the ARRIS Space Connect VAP4641 to your gateway through Ethernet
- Connect your laptop to the Web User Interface of the ARRIS Space Connect VAP4641 (see section 7)
- From your laptop, with your favorite web browser, select the menu **WiFi Settings/ Backhaul**
- Enter the SSID name of your gateway 5 GHz band access point in **Wireless Network Name** field
- Enter the WPA2 passphrase of your 5 GHz band gateway access point in the **Passphrase** field
- Click on **Apply**
- Wait for the LED to change state (see section 2)

← → ↻ ⓘ Not secure | 192.168.1.253

ARRIS

Wi-Fi Settings

Wi-Fi Name (SSID)

Backhaul

WPS

Administration

Other Settings

Logout

Legacy

Wi-Fi Settings - Backhaul

Wireless Interface:

5.0 GHz ▾

Enable:

On

Wireless Network Name:

Encryption Mode:

WPA2-PSK ▾

Encryption Protocol:

AES ▾

Passphrase:

[Click here to display](#)

Apply

Cancel

VAP4641 Wireless Mesh Point

Advanced Setup - ARRIS Space Connect VAP4641 (v8.25)

4. UPDATING SSID AND PASSWORD ON ARRIS SPACE CONNECT VAP4641

- Log into the ARRIS Space Connect VAP4641. (see section 7)
 - Navigate to Wi-Fi setting, and Wi-Fi-Name (SSID).
 - Update the Wireless Network Name (SSID) and password to your preference.
 - Click on Apply and wait for a few seconds for the update take effect.
- ** PLEASE NOTE:** Once the Controller (Main Unit) has been updated all Connected Agents (Nodes) will receive changes/updates within approx. 1 minute.

The screenshot shows the ARRIS Space Connect VAP4641 web interface. On the left is a dark sidebar with navigation links: Wi-Fi Settings (highlighted in orange), Wi-Fi Name (SSID), Backhaul, WPS, Administration, Advanced Settings, and Logout. The main content area is titled 'Wi-Fi Settings - Wi-Fi Name (SSID)'. It contains the following fields: 'Wireless Interface' with a dropdown menu showing '2.4 GHz'; 'Enable' with a radio button set to 'On'; 'Wireless Network Name' with a text input field containing 'ARRIS-24G-452'; 'Encryption Mode' with a dropdown menu showing 'WPA2-PSK'; and 'Passphrase' with a text input field containing asterisks. A blue link 'Click here to display' is next to the passphrase field. At the bottom are two orange buttons: 'Apply' and 'Cancel'.

5. CONNECTING YOUR HOME DEVICES TO THE ARRIS SPACE CONNECT VAP4641 - WPS PUSH BUTTON PROCEDURE

Prerequisite

- The ARRIS Space Connect VAP4641 is up and running and the LED is displaying solid Green, blinking Green/Amber or solid Amber
- You are now able to associate your smartphones, tablets and laptops to one of the ARRIS Space Connect VAP4641 access points

WPS Push button procedure

- Press the WPS button on the ARRIS Space Connect VAP4641
- Start the WPS procedure on your home device by pressing its WPS physical button or clicking the WPS virtual button you can find on a dedicated screen
- The ARRIS Space Connect VAP4641 will show its LED blinking Amber for a while
- When the LED returns to the solid Green state, the pairing is successful
- Your home device is connected to the home network and able to surf

LED COLOUR	WPS STATE	COMMENTS
Blinking Amber	WPS session open	Button pushed
Fast Blinking Red for 10 s	Pairing failed	Retry the procedure
Solid Green for 15 s	Pairing successful	

VAP4641 Wireless Mesh Point

Advanced Setup - ARRIS Space Connect VAP4641 (v8.25)

6. CONNECTING YOUR HOME DEVICES TO THE ARRIS SPACE CONNECT VAP4641 - MANUAL SETUP

Prerequisite:

- The white printed label located on the back side of the ARRIS Space Connect VAP4641 displays the SSID names of its 5 GHz and 2.4 GHz band access points
 - ARRIS-abcd
 - ARRIS-24G-abcdwhere abcd are different for each unit
- If SSID and Passphrase was updated, enter updated SSID and password.
- The printed label displays also the unique wireless passphrase necessary to authenticate your home device

Procedure:

- From the user interface of your home device, go to the wireless setup screen Select the SSID name of the VAP4641
- Enter the passphrase when prompted
- Wait for the message of successful connection
- Your home device is connected to the home network and able to surf

7. HOW TO CONNECT TO THE WEB USER INTERFACE (WIRED)

- The ARRIS Space Connect VAP4641 web user interface is providing a set of screens displaying diagnostics information and allowing you to set up manually or fine tune the configuration

Connection procedure:

- Connect your laptop to the ARRIS Space Connect VAP4641 through the Ethernet cable
- Configure your laptop static IP address to be **192.168.1.x** (where x is in the range 2 to 252)
- Configure your laptop static subnet mask to be **255.255.255.0**
- Enter the following URL in your favorite web browser: **http://192.168.1.253**
- Enter the Username and Password when prompted:
- Username is **admin**, Password is the **default wireless key** displayed on the white label printed on the casing

8. HOW TO MANUALLY FIX THE OPERATIONAL MODE

- By default the ARRIS Space Connect VAP4641 operational mode is automatically determined and set up when you connect it or disconnect it to/from your home gateway through the Ethernet cable (see section 1, 2, 3)
- VAP4641 operational modes are
 - Auto
 - Access Point (Wired Backhaul)
 - Wireless Extender (Wireless Backhaul)
 - Wireless Bridge (STA mode)
- It is possible to fix the operational mode from the GUI
- Use section 7 to access the VAP4641 GUI
- Select the menu **Advanced Settings / Network**
- Pick out the desired **Operational Mode** from the drop down list
- Select **Auto** to let the device determine the mode automatically
- Otherwise, choose **Access Point, Wireless Extender**
- Click on **Apply** and wait for a few seconds

VAP4641 Wireless Mesh Point

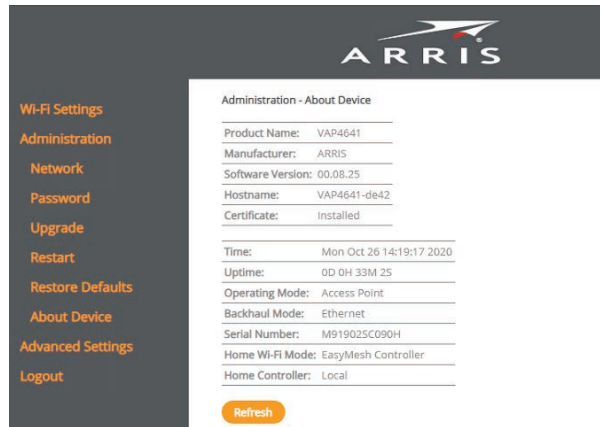
Advanced Setup - ARRIS Space Connect VAP4641 (v8.25)

9. HOW TO SET THE HOME NETWORK OPERATIONAL MODE

- The Home Network operational mode is set in the factory before the unit is shipped to the customer. It is then retained even if the configuration is restored to defaults
- ARRIS Space Connect VAP4641 Home Network operational modes are:
 - Wi-Fi Home disabled
 - HNE Agent
 - EasyMesh Agent
 - EasyMesh Auto (Default)
- It is possible to change the Home Network operational mode from the GUI
- Use section 7 to access the ARRIS Space Connect VAP4641 GUI under advanced setting
- Select the menu **Advanced Settings / Network** (or Other Settings / Network)
- Pick out the desired **AHN Operational Mode** from the drop down list
- Select the desired mode
- Click on **Apply** and wait for a few seconds

10. HOW TO SETUP MESH NETWORKING

- Use section 7 to access the GUI
- Select **Advanced Settings**
- Select **Network**
- When connecting 2 or more ARRIS Space Connect VAP4641's to a network, the first ARRIS Space Connect (Hub) connected to your router, will always be the EasyMesh Controller, and the other Extenders will be the EasyMesh Agent (Node).
- Default operation mode is Access Point.
- Home Wi-Fi Mode is set to EasyMesh Controller as this is your Main Hub.
- All other wireless agents that will be paired in future will adopt the Agent Mode by pairing with WPS.



VAP4641 Wireless Mesh Point

Advanced Setup - ARRIS Space Connect VAP4641 (v8.25)

- Once the controller has been configured, update your network setting back to obtain an IP address automatically.
- You are now able to pair all nodes to your controller.
- Follow Quick Start Guide for pairing process.

Internet Protocol Version 4 (TCP/IPv4) Properties

General

You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.

☐ Obtain an IP address automatically

☒ Use the following IP address:

IP address: 192 . 168 . 1 . 252

Subnet mask: 255 . 255 . 255 . 0

Default gateway: . . .

☐ Obtain DNS server address automatically

☒ Use the following DNS server addresses:

Preferred DNS server: . . .

Alternate DNS server: . . .

☐ Validate settings upon exit

Advanced...

OK Cancel

11. HOW TO CHANGE THE STATIC IP ADDRESS OF THE ARRIS SPACE CONNECT VAP4641

- The static IP address of the ARRIS Space Connect VAP4641 is by default **192.168.1.253**
- Use section 7 to access the ARRIS Space Connect VAP4641 GUI under **admin** or **support** menu
- Select the menu **Advanced Settings / Network** (or Other Settings / Network)
- Change the IP Address value (for instance **192.168.1.252** for your second extender)
- Click on **Apply** and wait for a few seconds
- In your browser address bar, change the address from **http://192.168.1.253** to the new one (for instance **http://192.168.1.252**) and re-enter the login details

12. HOW TO CHECK THE FIRMWARE VERSION

- Use section 7 to access the GUI
- Select **Administration**
- Select the menu **About Device**
- The ARRIS Software Version is displayed in the screen as below

← → ↻ ⓘ Not secure | 192.168.1.253

ARRIS

Administration - About Device

Product Name: VAP4641

Manufacturer: ARRIS

Software Version: 00.06.45 debug

Hostname: VAP4641-231d

Certificate: Not Valid

Time: Fri Jan 11 15:08:12 2019

Uptime: 00 04 12M 22S

Operating Mode: Access Point

Backhaul Mode: Ethernet

Serial Number: TBD

13. HOW TO RESET YOUR CONFIGURATION TO DEFAULT SETTINGS

- Your ARRIS Space Connect VAP4641 is powered up and running
- Disconnect the ethernet cable from the ARRIS Space Connect VAP4641
- Locate the Reset pinhole push button located on the right side of the casing
- Press the button with a pencil for approx. 10 - 15 seconds
- Maintain it pressed until the LED starts blinking green fast
- The unit will restart booting with the default factory settings

CONDITIONS OF WARRANTY

Space Television warrants the product as being free from defects in material and workmanship for a period of 12 months starting from the date of purchase indicated on it. See note below.

If during this period of warranty the product proves defective, under normal use, due to defective materials or workmanship, Space Television, at its sole option, will repair or replace the product. Return the product to your local dealer for repair.

THE WARRANTY IS APPLIED ONLY FOR DEFECTS IN MATERIAL AND WORKMANSHIP AND DOES NOT COVER DAMAGE RESULTING FROM:

- Misuse or use of the product out of its specifications.
- Installation or use in a manner inconsistent with the technical or safety standards in force in the country where the product is used
- Use of non-suitable accessories (power supply, adapters...).
- Installation in a defect system.
- External cause beyond the control of Space Television such as drop, accidents, lightning, water, fire, improper ventilation.

THE WARRANTY IS NOT APPLIED IF:

- Production date or serial number on the product is illegible, altered, deleted or removed.
- The product has been opened or repaired by a non-authorized person.
- Damage has occurred from lightning or electrical surge.

VAP4641 Wireless Mesh Point

Advanced Setup - ARRIS Space Connect VAP4641 (v8.25)

TECHNICAL SPECIFICATIONS

Wireless Characteristics

4x4 5GHz 802.11ac

2x2 2.4GHz 802.11n

4 Spatial Streams

MU-MIMO

Implicit/Explicit Dynamic Digital Beam forming

High-Power Transmit For Maximum Coverage

802.11e, 802.11k, 802.11v, 802.11r

5 GHz Wireless Operating Channels

5 GHz UNII bands (5.15–5.35 GHz, 5.470–5.725 GHz and 5.725 – 5.850 GHz bands)

20, 40, 80 and 160 MHz bandwidths supported

ARRIS HomeAssure Wi-Fi features

Automatic discovery and setup

Continuous pushing of Wi-Fi configuration to additional units

Band steering for link improvement and load balancing

Client steering for roaming, link improvement, and load balancing

ARRIS Wi-Fi Home Mobile App support

Wi-Fi CERTIFIED EasyMesh

Wireless Security

WPA2/WPA/AES/WEP-128/WEP-64

Push-Button Wireless Setup (WPS)

Wired Network Interfaces

1 x RJ45 Gigabit Ethernet (10/100/1000) LAN port

Management

ARRIS ECO Agent TR-069 compliant management client

ARRIS ECO Envoy USP compliant management client

Password-Protected, Local Web Access

ARRIS Wi-Fi Home Mobile App support

LEDs

Power/WPS status/Backhaul status

RJ45/LAN status LEDs

Regulatory Certification (pending)

ICASA TA-2019/667 Approved

Wi-Fi Alliance

CE Mark

FCC

RoHS compliant

Operating Environment

Operating Temperature 0° to +40°C

Storage Temperature -40° to +60°C

Relative Humidity 8% to 95%; Non-Condensing

Physical Specifications

130mm x 100mm x 40mm (5.1in. x 3.9in. x 1.6in.)

Accessories

AC power cable

Quick Start Guide

SAFETY INSTRUCTIONS



Read these instructions carefully before connecting the unit



To prevent fire, short circuit or shock hazard:

- Do not expose the unit to rain or moisture.
- Install the unit in a dry location without infiltration or condensation of water.
- Do not expose it to dripping or splashing.
- Do not place objects filled with liquids, such as vases, on the apparatus.
- If any liquid should accidentally fall into the cabinet, disconnect the power plug.



To avoid any risk of overheating:

- Install the unit in a well aery location and keep a minimum distance of 10 cm around the apparatus for sufficient ventilation
- Do not place any items such as newspapers, table-cloths, curtains, on the unit that might cover the ventilation holes.
- Do not place any naked flame sources, such as lighted candles, on the apparatus
- Do not install the product in a dusty place
- Use the apparatus only in moderate climates (not in tropical climates)
- Respect the minimum and maximum temperature specifications



To avoid any risk of electrical shocks:

- Connect apparatus only to socket with protective earth connection.
- The mains plug shall remain readily operable
- Pull out power plug to make the different connections of cables
- To avoid electrical shock, do not open the housing of adapter.



Maintenance



Only use a dry soft cloth to clean the cabinet.



Do not use solvent



For repairing and servicing refer to qualified personnel.



Dispose according your local authority's recycling processes

VAP4641 Wireless Mesh Point

Advanced Setup - ARRIS Space Connect VAP4641 (v8.25)

FEDERAL COMMUNICATION COMMISSION INTERFERENCE STATEMENT

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.

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. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter. Operations in the 5.15-5.25GHz band are restricted to indoor usage only. This device meets all the other requirements specified in Part 15E, Section 15.407 of the FCC Rules.

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 25cm between the radiator & your body.

FOR COUNTRY CODE SELECTION USAGE (WLAN DEVICES)

The country code selection is for non-US model only and is not available to all US model. Per FCC regulation, all Wi-Fi products marketed in the US must be fixed to US operation channels only.

INDUSTRY CANADA STATEMENT

This device complies with ISSED's licence-exempt RSSs. 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:

- (i) the device for operation in the band 5150-5250 MHz is only for indoor use to reduce the potential for harmful interference to cochannel mobile satellite systems;
- (iv) where applicable, antenna type(s), antenna models(s), and worst-case tilt angle(s) necessary to remain compliant with the e.i.r.p. elevation mask requirement set forth in section 6.2.2.3 shall be clearly indicated.

Radiation Exposure Statement:

This equipment complies with ISSED radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with greater than 27cm between the radiator & your body.

CARING FOR THE ENVIRONMENT BY RECYCLING

When you see this symbol on an ARRIS product, do not dispose of the product with residential or commercial waste. Recycling your ARRIS Equipment.

Please do not dispose of this product with your residential or commercial waste. Some countries or regions, such as the European Union, have set up systems to collect and recycle electrical and electronic waste items. Contact your local authorities for information about practices established for your region. If collection is not available, contact ARRIS customer support for information.



Helpline: 0861 40 41 42
WWW.SPACETV.CO.ZA