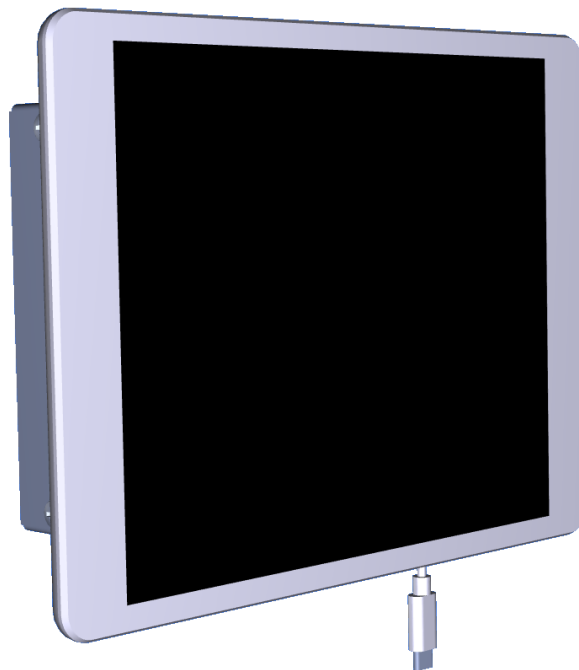


HMI TABLET – INSTALLATION AND OPERATING MANUAL



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IMPORTANT INFORMATION FOR INSTALLERS AND FINAL USERS

This HMI Tablet should be:

- Installed only by qualified personnel in accordance with local and national regulations.
- Mounted properly as described in the manual, so the casing or enclosure is only accessible to the end user and protection against electric shock is assured.
- Proper installation to prevent electric shock hazard.

INTRODUCTION


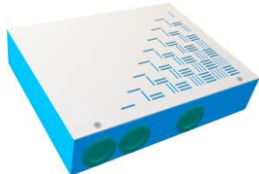

This document is an Operating and Maintenance Instruction for the HMI Tablet – an interface to the controls of VTS Air Handling Units. The HMI Tablet is a multifunctional device enabling fast and easy maintenance of the air handling unit. The Tablet, when linked with the AHU supports the following services:

- Advanced monitoring of the Air Handling Unit by means of the Remote Visualization Application run from the AHU's controller.
- Direct monitoring of the Air Handling Unit operations and change to its settings using controller's original hardware interface emulation
- Local library of all technical documentation related to handled AHU and other related documents.

1 COMPONENTS OF THE HMI TABLET SET

The set of the HMI Tablet consists of the following components:

Table 1 - Components of the HMI Tablet set

Component of the HMI Tablet set	Graphics	Application
HMI Tablet		The tablet itself. Supports the Air Handling Unit remote control using the Remote Visualization Application and the HMI emulation.
Communication box		Auxiliary component of the system, which supports: Power supply to the HMI Tablet. Wi-Fi communication between the HMI Tablet and the Air Handling Unit.
Cable Strain Relief		A strain relief to be installed on the power supply cable inside the Communication box.

2 INSTALLATION OF THE COMMUNICATION BOX AND START-UP

2.1 COMMUNICATION STRUCTURE BETWEEN AHU CONTROLLER AND THE COMMUNICATION BOX

The Communication Box is equipped with its own Wi-Fi router enabling wireless communication with the Tablet. This Wi-Fi module needs to be connected by means of intranet cable to the Air Handling Unit. To do so, use a network cable terminated both sides with RJ45 plug (no provided). See below diagram – the network cable marked with blue color.

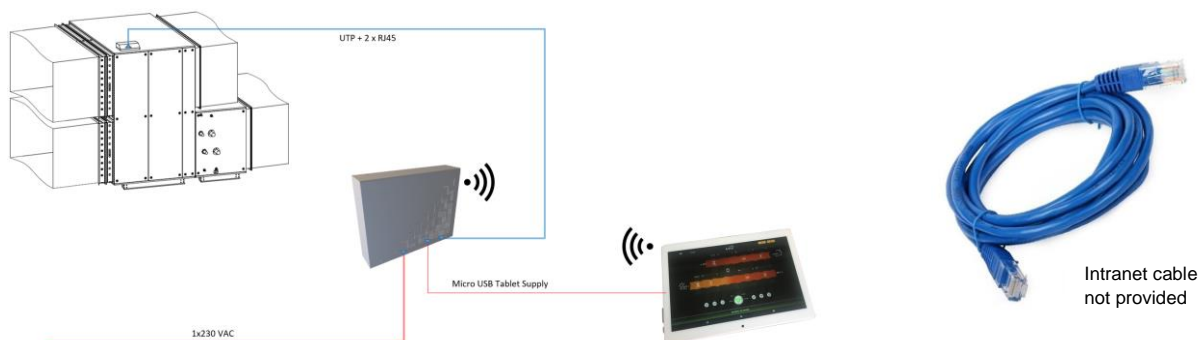


Figure 1 - HMI Tablet - AHU communication diagram

2.2 CONNECTION POINTS FOR THE INTRANET CABLE IN THE AIR HANDLING UNIT

The network cable will be plugged to the connecting point on the Air Handling Units. Depending on the Air Handling type, the following connecting points on the AHU will applies:

2.2.1 VVS STANDARD AIR HANDLING UNITS WITH EXTERNAL CONTROL CABINET

For the VVS Standard air handling unit, where the controller is installed in external cabinet box, the network cable will be plugged directly to the port on the controller. For this you will need to pass the UTP cable threwh the grommets of the AHU control cabinet (select best size from the entire array) and plug it directly to the port shown on Figure 2 of the controller.

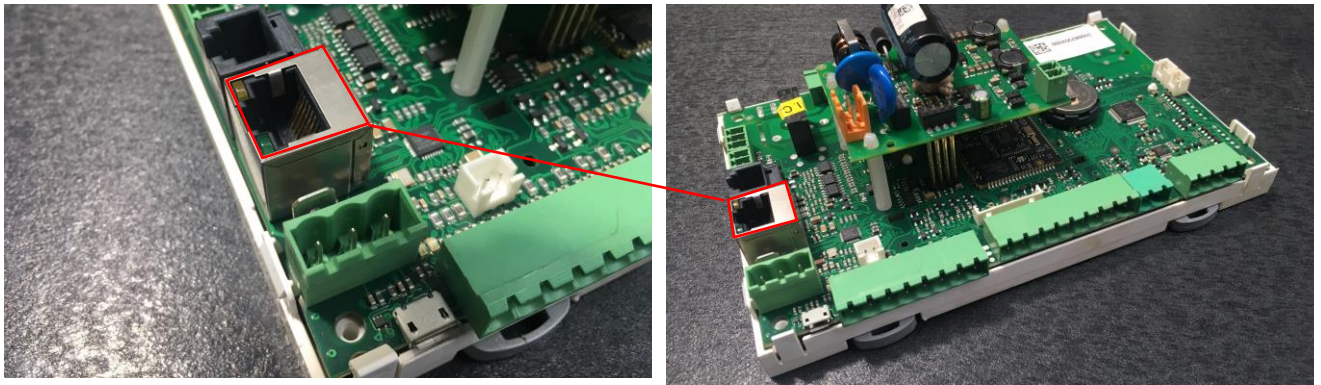


Figure 2 - Location of the RJ45 port on the uPC controller

2.2.2 VVSc FLOOR MOUNTED COMPACT AIR HANDLING UNITS

The VVSc unit is factory equipped with terminal box mounted on the side of the main unit's body. The network terminal with RJ45 plug is available inside the terminal box of the unit. The location of the terminal box may vary depending on the AHU execution (for indoor or outdoor application). Plug your UTP cable using one of the ports marked on Figure 3 – anyone which is free.

VVSc unit factory fitted for Indoor installation

VVSc unit factory fitted for Outdoor installation

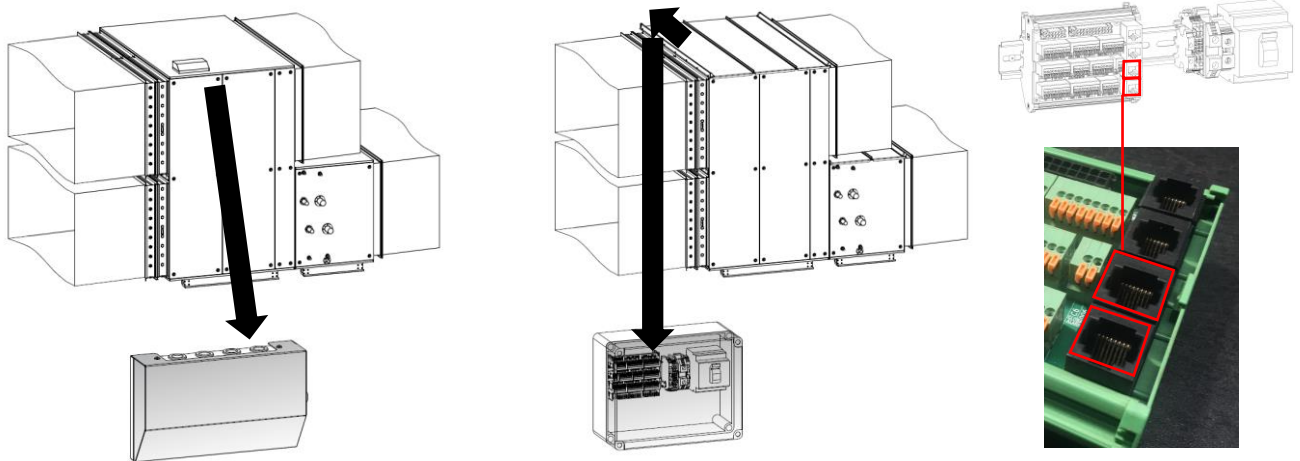


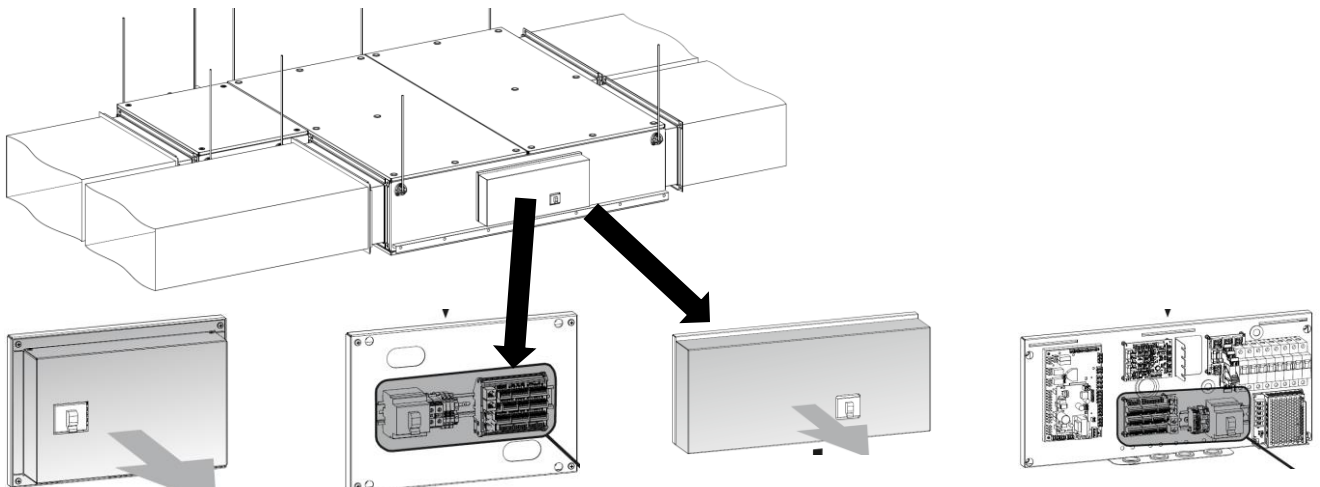
Figure 3 - VVSc - TCP/IP connection

2.2.3 VVSS CEILING SUSPENDED AIR HANDLING UNIT

The VVSc unit is factory equipped with terminal box mounted on the side of the main unit's body. The network terminal with RJ45 plug is available inside the terminal box of the unit. The location of the terminal box may vary depending on the AHU execution (controller installed in the AHU body or in the terminal box). Plug your UTP cable using one of the ports marked on Figure 4.

VVSSs unit – controller installed inside the AHU body

VVSSs unit – controller integrated with terminal-box



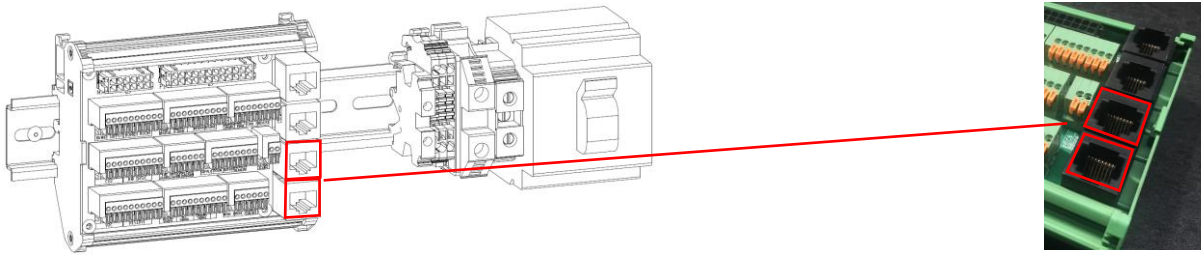


Figure 4 - VVSs - TCP/IP connection

2.3 INTERNAL COMPONENTS OF THE COMMUNICATION BOX

The communication box is equipped with the following components:

1. Casing of the communication box
 - Front cover (not shown on the drawing)
2. Power supply unit
3. Wi-Fi module with antennas
4. Local network RJ45 port
5. Power supply grommet
6. Cable for Tablet charging with USB-C plug (cable not shown on the drawing)
7. Intranet cable grommet

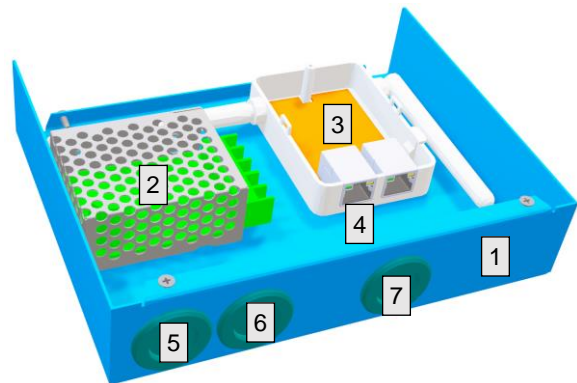
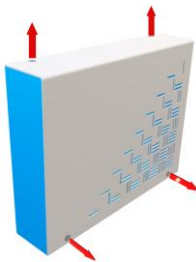


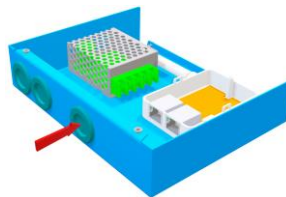
Figure 5 - Internal components of the Communication box

2.4 CONNECTION OF THE NETWORK CABLE ON THE COMMUNICATION BOX

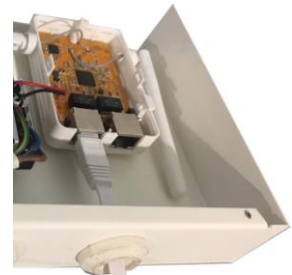
To plug other end of the intranet cable to the Communication box, follow below instruction:



Untighten 4 screws holding the front cover of the Communication box



Put the network cable through the grommet like shown above



Plug the network cable to the port marked with L (local)

Figure 6 - connection of the network cable to the communication box

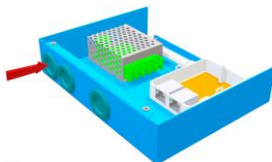
2.5 CONNECTION OF THE POWER SUPPLY CABLE

The Communication Box requires 1x230 VAC power supply. To install the power supply cable, follow the steps:

CAUTION...

Before attempting installation of the power supply cable, ensure it's not powered!

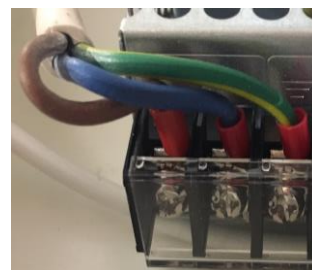
Power supply cable: min. 3 x 1,0 mm² (Phase, Neutral, PE)



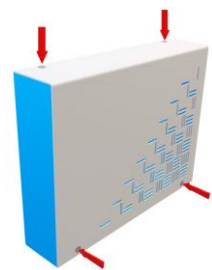
Pass the power supply cable (3 wires, min 1,5 m²: Phase, Neutral, PE) through the gland like shown above.



Apply the strain relief on the cable just behind the grommet (included in the set)



Connect the wires to the terminals. Left to right: Neutral, L1 (Phase), Protective Earth (PE).



Put the cover and tight the screws.

Figure 7 - Installation of the power supply cable to the Communication box

MOUNTING THE COMMUNICATION BOX ON THE WALL

The communication box can be mounted on any wall by means of screws or a set of screws with dowels. To do so, use the holes in the rear wall on the communication box.

To install the communication box on the wall, do as follows:

- Disconnect the communication from the mains. Ensure it is no longer energized.
- Remove the front cover of the Communication Box
- Use 4 screws or screws with dowels (not provided) – depending in the material you will be mounting to.
- Put the front cover back and tight its screws.

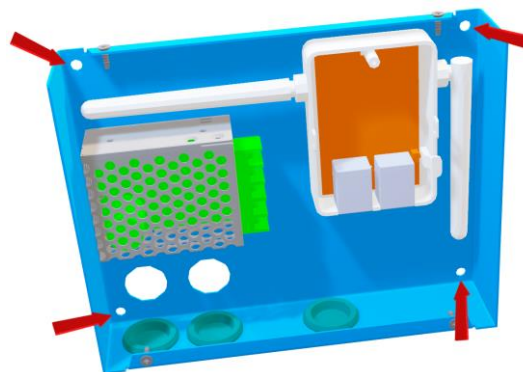


Figure 8 - installation holes on the Communication Box

2.6 START-UP OF THE COMMUNICATION BOX

Once the Communication box is installed, connect the power supply to the mains. The Communication box will set-up the Wi-Fi network for your HMI Tablet.

3 ESTABLISHING WI-FI COMMUNICATION BETWEEN THE TABLET AND THE COMMUNICATION BOX

3.1 HMI TABLET – THE DESIGN

The HMI tablet consists of the following components

1. Touchable screen – displays all information concerning the AHU operations, documents and other
2. Camera – not in use for any AHU-related operations
3. On-Off button – toggles the Tablet between active and sleep mode
4. Audio volume buttons – to change the audio volume of the HMI Tablet
5. Power supply USB-C port – for charging the battery of the HMI Tablet.

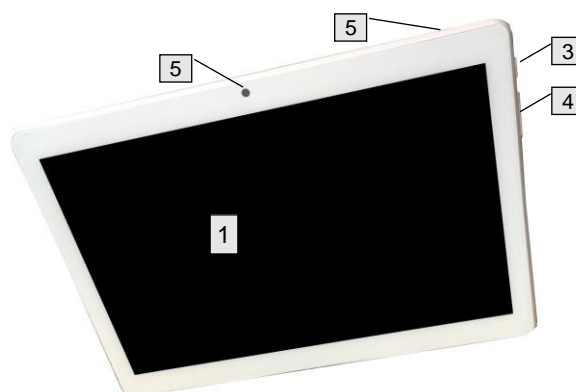


Figure 9 - HMI Tablet - main components

3.2 CHARGING THE HMI TABLET

The HMI tablet required to be charged before first launch. To do so, plug the USB-C cable to the port 5 (Figure 9). The charging status will appear on its screen. Charge your tablet for at least one hour before you start communicating it with your Air Handling Unit.

You can charger your tablet using any other USB charger with the USB-C plug.

3.3 HMI TABLET LAUNCH

Once the tablet is charged, press the On-Off button (button 3, Figure 9). The HMI tablet will get launched and will display its main screen (Figure 10) There are two key icons displayed on the main screen of it:

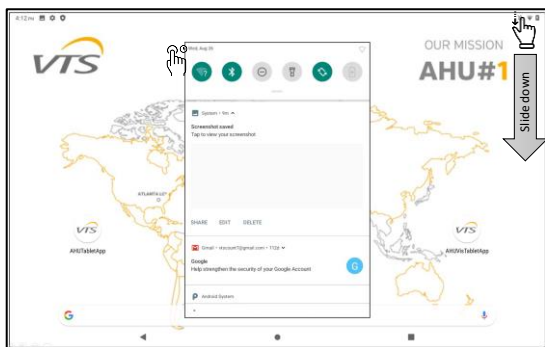
	<p>AHU Tablet Application – direct access to technical documentation of the Air Handling Unit and the Remote Visualization Application and other related documents. Refer to chapter 4.1 of this manual</p>
	<p>Direct access to the Remote Visualization Application of the AHU. Refer to chapter 4.2 of this manual.</p>



Figure 10 - Main window of the HMI Tablet screen

3.4 WI-FI COMMUNICATION SET-UP BETWEEN THE TABLET AND COMMUNICATION BOX

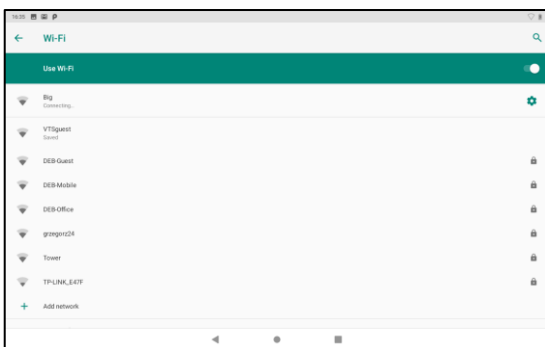
With the running HMI Tablet, follow below instruction to communicate it with the Air Handling Unit using the Communication Box:



Keep your HMI tablet close to the Communication Box (Wi-Fi range).

Slide down the screen starting from right-upper corner of the screen
Press and hold the Wi-Fi set-up button.

The Wi-Fi menu will appear on the screen



Select the network of your Communication Box.

When communicating for the first time, the factory Wi-Fi settings of the access point in your Communication Box are:

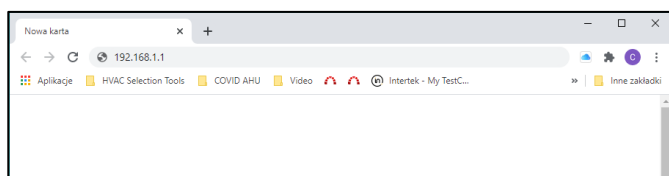
- **SSID: VMS**
- **Security: WPA2-PSK**
- **Password: 20vtsVTS123098**

Caution

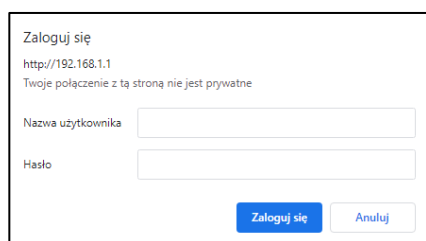
Each time you configure new AHU with its Communication Box and HMI Tablet, the above listed SSID and Password are the same. In case of more AHUs being in the common range of their Wi-Fi network, keep the Communication Box powered only for the AHU you are currently configuring. This is to prevent confusing the right network when setting-up the communication.

Figure 11 - WiFi connection steps

Once your HMI tablet is communicated you can customize your Wi-Fi network name (SSID) and Password. Changing the SSID of the network will help to distinguish the network of your Air Handling Unit for other other neighboring Wi-Fi networks. To do so, follow instructions below:



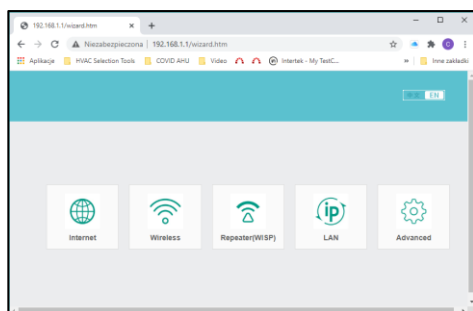
Open the web-browser on your HMI Tablet (pre-installed Chrome web browser). Type "192.168.1.1" in the address field and hit Enter



The login screen will appear
Enter the

- Username: admin
- Password: admin

... and hit Enter button



Enter new Wireless network settings. A pop-up where you can change the Wi-Fi settings will appear.

Wireless Setting

SSID	VMS
Channel	2412MHz (Channel 1)
Bandwidth	20/40M
Security	WPA2-PSK
Password	20vtsVTS123098
<input type="button" value="Apply"/>	

You can change the following settings of your Wi-Fi network:

SSID – the name of the network. You can use any name; however, it is recommended to use the AHU tag of your unit (like for example AHU-01). This will help you to distinguish the right network when communication your HMI Tablet in the future.
Password – your password to connect the Wi-Fi network.

Once new SSID and Password is set, hit the Apply button. The router will re-start with new settings applied.

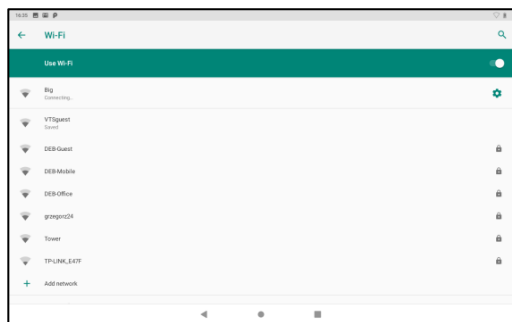


Figure 12 - Customization of WiFi Settings

Repeat the communicating procedure between your HMI Tablet and Access point

- Select the right network – new SSID you've just defined.
- New password to the network you've just defined.

4 MAIN OPERATIONS ON THE HMI TABLET

There are two main icons on the HMI Tablet Interface (Figure 10). Both are located on the left side of the screen



AHUTabletApp

AHU Tablet Application – direct access to technical documentation of the Air Handling Unit and the Remote Visualization Application and other related documents



AHUVisTabletApp

Direct access to the Remote Visualization Application of the AHU

4.1 THE AHU TABLET APPLICATION

The AHU Tablet Application supports easy access to all factory uploaded documents on your HMI Tablet. To enter the application, hit the AHU Tablet Application icon. The screen like shown on Figure 13 will appear.

The documents embedded on your HMI Tablet are grouped as follows:

- Advertising materials – link to the product catalogs of VTS product
- Technical documentation – link to Operating and Maintenance Instructions of your Air Handling Unit
- Ventus Management System – link to the AHU Visualization Application manual. In this manual all details.

For each of above listed links, a sub-menu with links to relevant documents will be displayed.

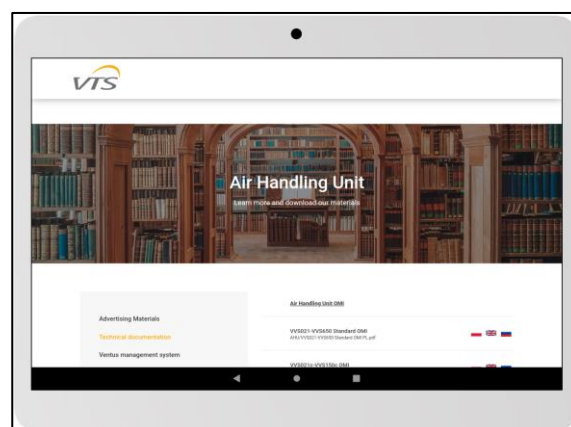


Figure 13 - AHU Tablet Application

4.2 AHU VISUALIZATION

The AHU Visualization button launches the Remote Visualization Application run directly from the AHU Controller's web server.

The operation of the Remote Visualization Application is out of scope of this manual.

Refer to the Remote Application Application manual stored on your HMI Tablet or download it from the VTS Group web-site.



Figure 14 - Remote Visualization Application

5 TECHNICAL SPECIFICATION

5.1 HMI TABLET

- Dimensions
 - 244*162*8,9 mm
- LCD
 - 10,1", 16:9, Touchable
- Battery
 - Type: Lithum-ion polimer battery
 - Capacity: 3,7 V / 5500 mAH
 - Endurance: 5-6 hours
- CPU
 - Type: Spreadtrum9863 octa core 8xa55
- Speed: 1.6GHz+1.2ghz
- Memory
 - RAM: 3GB
 - ROM Flash: 32GB
- Network connections
 - WiFi Module: WIFI 802.11 ac/b/g/n 2.4GHz
- Operating System
 - Type: Android
 - Version 9.0 GMS

5.2 COMMUNICATION BOX

- Power supply
 - Voltage: 1x230 V AC
 - Power consumption: 15W
- Output power (USB-C charging output)
 - Voltage: 5V DC
 - Rated output current: 3A
- Electric connections
 - Internal terminal block
- Protection
 - overload, short-circuit, voltage growth
 - Speed: 1.6GHz+1.2ghz
- WiFi Acces point
 - Interface: 1 x WAN, 1 x LAN
 - Frequency: 2.4 Ghz
 - Protocol: IEEE802.11n/g/b, IEEE802.3, IEEE802.3u
 - Wireless settings: 11Mbps, 54Mbps, 72Mbps, 150Mbps, 300Mbps
 - Encription: WPA, WPA2, WPA/WPA2 mixed support
 - Tx power (minimum): 20 dBm
 - RX power (minimum): -95 dBm
- Physical
 - Dimmensions: 62.5x51x28mm
 - Operating temperature range: -25...70 °C