Models: Unipi Edge

PLEASE RETAIN THIS DOCUMENT FOR FUTURE REFERENCE

CAUTION

The unit can be powered only by a power source in compliance with the unit's specifications. Using unsuitable power supply can result in damage to the unit or connected devices. Unplug all power supplies and voltage sources before any manipulation with the unit – danger of electrical injury or component damage!

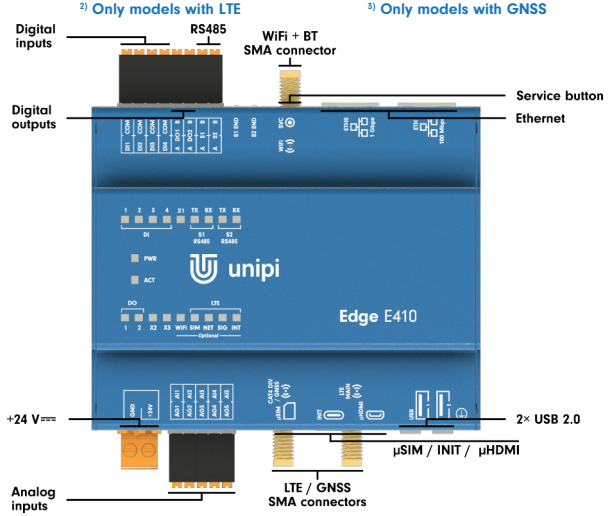
Do not use the controller in potentially explosive atmospheres! The controller can be installed only by trained personnel with sufficient qualification. The unit can be installed only in a suitable environment following the product's technical specifications (interior with suitable temperature and humidity, switchboards protected against water intrusion, etc.).

All connected peripherals should comply with all standards and regulations relevant to the country and the intended use.

Working conditions

Power supply (SELV)		+24 V ⎓	**Ingress protection (IEC 529)**	IP20
Input current		Max. 0.7 – 2.5 A (see the unit's datasheet)	**Working and storage temperature**	Working: -20 °C ... +60 °C Storage: -40 °C ... +85 °C
Power supply pole reversal protection		Yes	**Installation**	On a 35 mm DIN rail in a distribution box (holder included)
WLAN[1]	**Wi-Fi**	IEEE 802.11b/g/n/ac IEEE 802.11n/ac	2.4 GHz 5.0 GHz (5150–5350 MHz, 5470–5725 MHz)	radiofrequency power (max.) 20 dBm e.i.r.p. radiofrequency power (max.) 23 dBm e.i.r.p.
	Bluetooth	5.0, BLE	2.4 GHz	radiofrequency power (max.) 20 dBm e.i.r.p.
GSM[2]	**DCS 1800** **GSM 900**	UL f: 1710.2–1784.8 MHz UL f: 880.0–914.8 MHz	DL f: 1805.2–1879.8 MHz DL f: 925.0–960.0 MHz	radiofrequency power (max.) 32 dBm radiofrequency power (max.) 35 dBm
LTE[2]	**Band 1**	UL f: 1920–1980 MHz	DL f: 2110–2170 MHz	radiofrequency power (max.) 25 dBm
	Band 3	UL f: 1710–1785 MHz	DL f: 1805–1880 MHz	radiofrequency power (max.) 25 dBm
	Band 5	UL f: 824–849 MHz	DL f: 869–894 MHz	radiofrequency power (max.) 25 dBm
	Band 7	UL f: 2500–2570 MHz	DL f: 2620–2690 MHz	radiofrequency power (max.) 25 dBm
	Band 8	UL f: 880–915 MHz	DL f: 925–960 MHz	radiofrequency power (max.) 25 dBm
	Band 20	UL f: 832–862 MHz	DL f: 791–821 MHz	radiofrequency power (max.) 25 dBm
	Band 28	UL f: 703–748 MHz	DL f: 758–803 MHz	radiofrequency power (max.) 25 dBm
	Band 38	UL f: 2570–2620 MHz	DL f: 2570–2620 MHz	radiofrequency power (max.) 25 dBm
	Band 40	UL f: 2300–2400 MHz	DL f: 2300–2400 MHz	radiofrequency power (max.) 25 dBm
	Band 41	UL f: 2496–2690 MHz	DL f: 2496–2690 MHz	radiofrequency power (max.) 25 dBm
GNSS[3]		1559-1610 MHz, receive only		

[1] Only models with WLAN [2] Only models with LTE [3] Only models with GNSS



The number and position of I/O can vary for a particular unit (see Unipi Knowledge Base for details).

General information
www.unipi.technology

Technical support, Knowledge Base
https://kb.unipi.technology

Hereby, Unipi Technology s.r.o. declares that the radio equipment type E410/E411/E412/E413 is in compliance with Directive 2014/53/EU. The full text of the EU declaration of conformity is available at the following internet address: https://kb.unipi.technology/doc/

WEEE Directive Statement for the European Union
Unipi Edge cannot be disposed of as household waste. Different rules for handling electric waste may apply in other jurisdictions.

Compliance information
Unipi Edge complies with the requirements of EMC, RED and RoHS directives relevant for European Union states.

First steps

Software

Unipi Edge unit is based on OS Linux (Debian). Unipi provides several OS images containing different pre-installed applications. The default image is **Base OS** containing all necessary files for the unit to operate. The image can be reflashed (see below) with a custom image, or with one of the pre-assembled images available on the Knowledge Base (https://kb.unipi.technology).

Base OS: SSH access is enabled by default. The default login information for SSH access is username: "unipi", password is printed on the unit's informational label. **Changing the login credentials is immediately enforced after first SSH login.** For more detailed info, please visit https://kb.unipi.technology/passwords.

Unipi Edge unit startup

1. Connect the unit to a local network using a network cable (RJ45).
2. Connect a power supply compliant with the unit's product label. Wait for at least 20 seconds until the unit fully boots up.
3. Upon startup, the unit will automatically attempt to obtain an IP address from the DHCP server. If the attempt is unsuccessful the unit will use a random IP address from a range of 169.254.0.0/16. A default static IP address can be assigned in the service mode.
4. An mDNS record is simultaneously published into the network, making the unit available under a unique name. E.g: Edge E410 with serial number 1253701234, would be accessible at "http://e410-sn1253701234.local". The serial number can be found on the unit's product label.

Service mode

Service mode is a web tool for IP configuration, (de)activation of SSH service, reflashing of OS images, creation of OS backup to USB flash drive and other useful functions. To activate the service mode, follow these steps:

1. Remove any connected USB flash drives and connect the unit to a local network or directly to your PC, using a network cable.
2. Press and hold the "SVC" button on the unit's top side.
3. Connect a power supply. All outputs are set to their default configuration, all outputs are disabled by default.
4. Edge will boot into a service mode indicated by slow blinking of all LEDs (except PWR and ACT). You can now release the button.
5. The unit will set its own IP address to 192.168.200.200 while simultaneously attempting to obtain an IP address from the DHCP server. The unit will be then available at both IP addresses.
6. To access the service web interface, use a web browser and enter the IP address http://<ip-address>. Next, you will be prompted to enter login credentials: username "unipi", password is printed on the unit's informational label.

Reflashing the operating system

The operating system can be reflashed via the service web interface or by using a USB flash drive.

Download and extract the selected ZIP archive with Edge OS image from Knowledge Base (https://kb.unipi.technology) to your PC or use files from USB backup.

CAUTION

Reflashing will **delete all data stored in the unit's onboard memory storage**.

Reflashing the OS using service web interface

1. Switch the unit into the service mode (see above), indicated by slow blinking of all LEDs (except PWR and ACT).
2. Drag only the archive.swu file from the extracted archive and drop it into the Software Update dialogue in the service web interface.
3. Edge will start reflashing the OS, the process is indicated by rapid blinking of all LEDs (except PWR and ACT).
4. Wait until the process is finished – reflash progress can be seen in the Software Update dialogue.
5. The unit will automatically reboot upon successful OS image reflashing procedure.

Reflashing the OS using USB flash drive (Only models with USB A)

1. Prepare an USB flash drive with at least 4 GB of free memory (FAT32 format).
2. Copy all extracted files from OS image to the USB disk or use the USB flash drive with backup files.
3. Insert the USB flash drive into one of unit's USB port.
4. Press and hold the "SVC" button on the unit's top side.
5. Connect power supply.
6. Edge will start reflashing the OS, the process is indicated by rapid blinking of all LEDs (except PWR and ACT). You may now release the "SVC" button.
7. LEDs will stop blinking once the reflash is completed. The unit then automatically reboots.

NOTE

Some USB flash drives may not be compatible. If your flash drive does not work, try another one or reflash the OS using service web interface.

Reflashing the OS using USB Type-C (advanced)

It is used to recover the system if bootloader is damaged. It can also be used to create an OS backup. Exact steps can be found at https://kb.unipi.technology/en:hw:004-edge:09-startup-modes:03-init-mode