



## The New Comb Intercom with way, way more... IoT

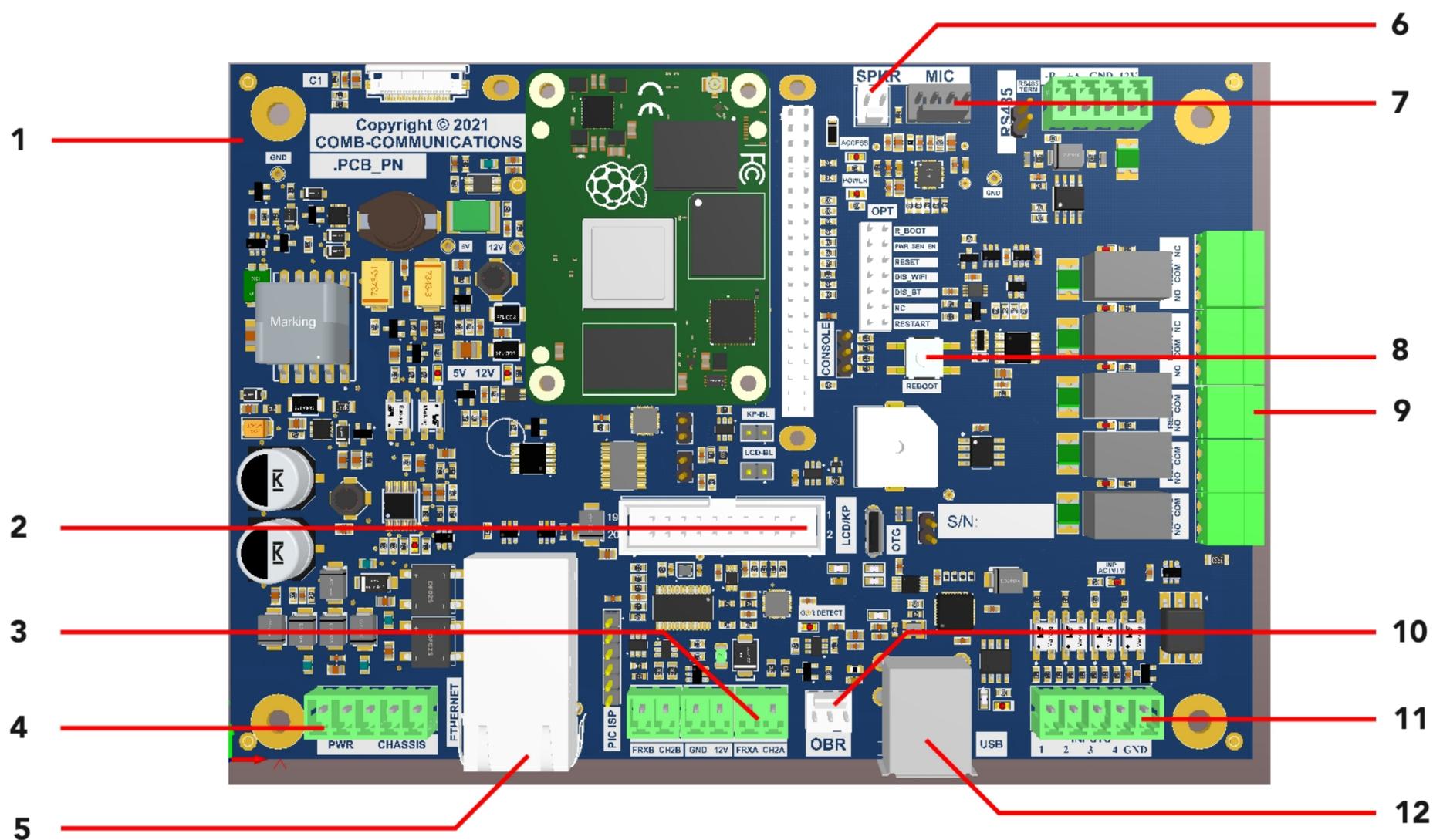
Introducing the MK II NS (No SIM/GSM), the next generation smart intercom which makes phone calls over the Internet via the Voice Over Internet Protocol (VOIP) and sends TAP codes via the MyComb Mobile app. This gives you all the control you are accustomed to, and more in terms of dependencies on cellular network provider failures (downtime due to connectivity).

Ideal for cluster complexes, townhouses, business parks, residential estates and several other access managed environments.

Featuring an entirely new foundation in the form of a redesigned, more robust, and significantly improved PC board.



# MK II NS BOARD LAYOUT

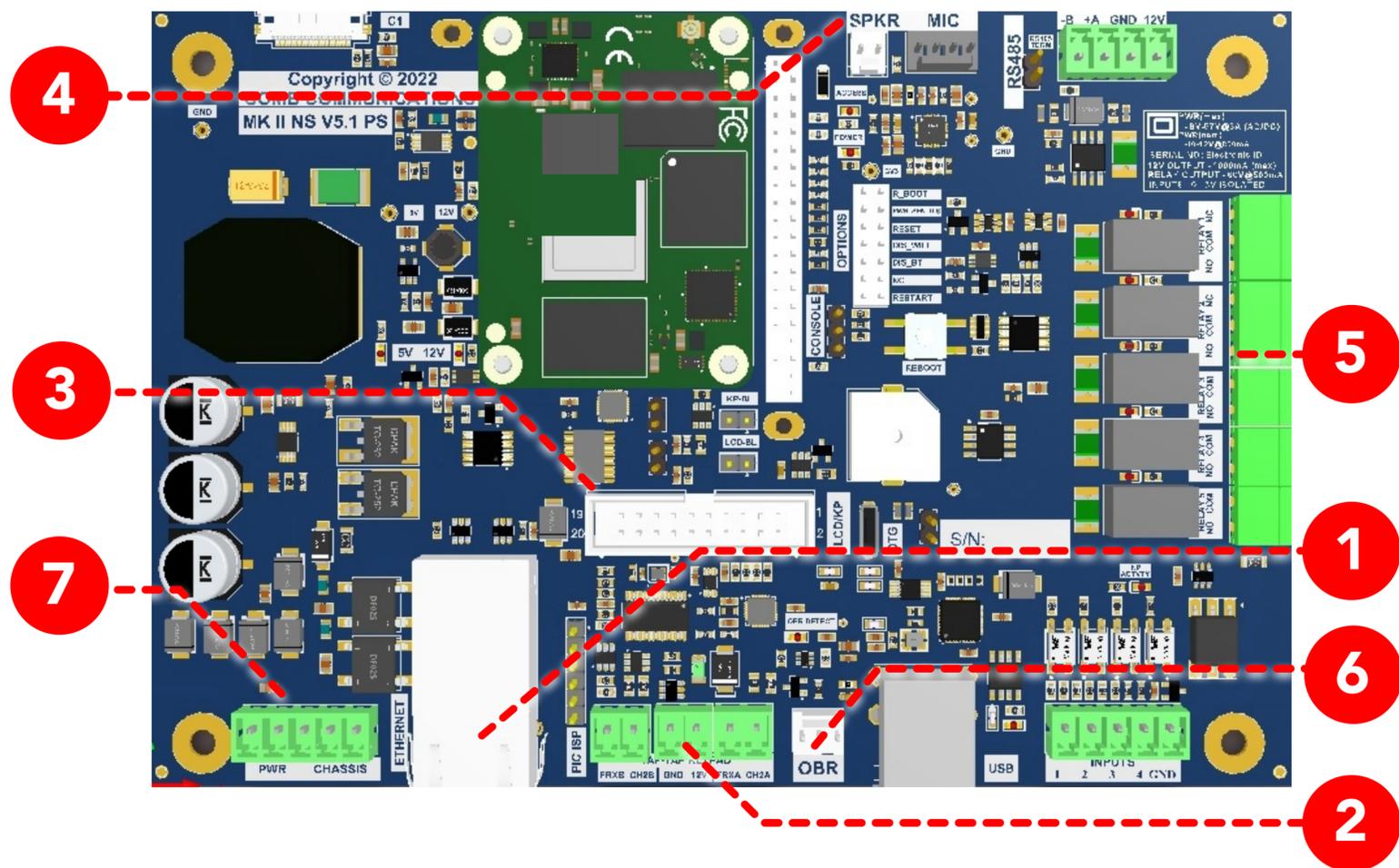


- 1: PC Board
- 2: Ribbon connection
- 3: TAP-TAP Channel A/B
- 4: Power connection
- 5: Ethernet Port
- 6: Speaker connection
- 7: Microphone connection
- 8: Reboot button
- 9: Relay connection
- 10: On-board receiver
- 11: Inputs
- 12: USB Input port

## TECHNICAL SPECIFICATIONS

Description	Indications
Primary Input AC With Switch-mode PS	85 - 240VAC
Secondary input DC	15.0VDC
Current draw	15 watts
Primary Cable type	1.5m AC
Ethernet Port	Cat 5 UTP
Internet connection type	ADSL Fiber or Router
Total Distance over ethernet	40m Maximum from hub
Internal wiring (Tap-Tap Keypad & Gate motor)	Comms cable
Humidity Range	10°C - 85°C
Display size	16 x 2 characters display
Battery Back up	No battery back up
USB Port	Any LTE modem
POE Active	Over Gigabit Adaptor 48VDC adaptor
Active VIOP LINE	Provided by Comb Contracts department
IP rating	54

# INSTALLATION USER GUIDE



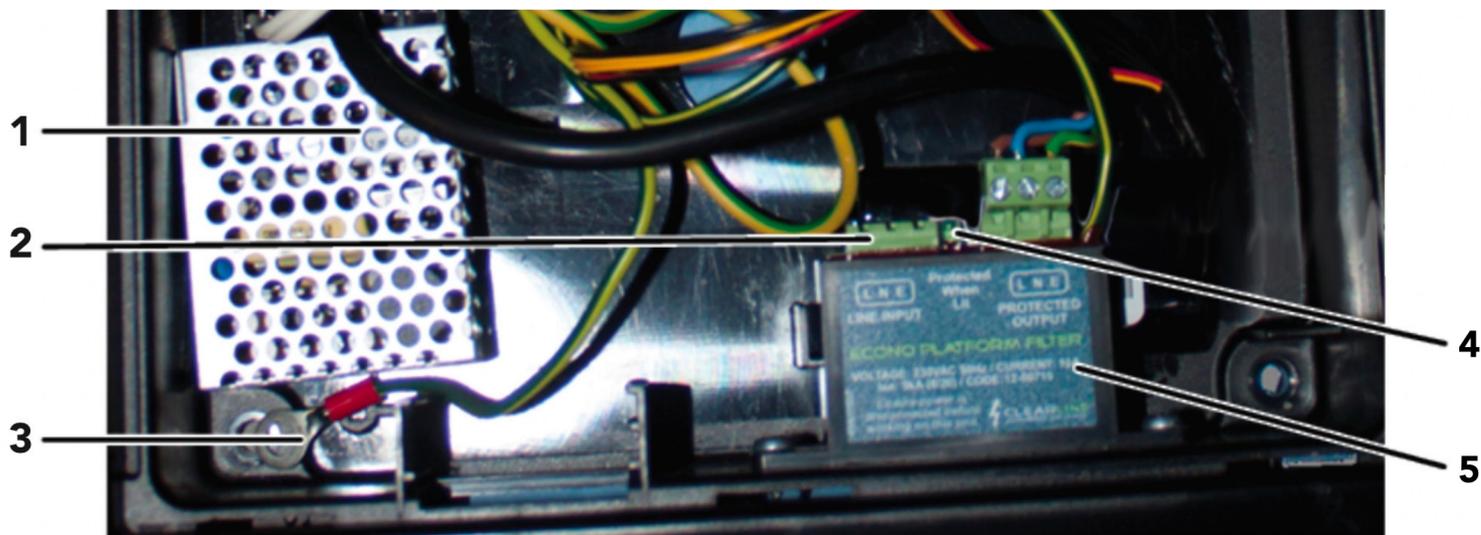
1. Test the Ethernet cable with a network tester to ensure there is a successful internet connection. Once you have ensured there is an internet connection, connect the ethernet cable to the PC board.
  2. Connect the intercom TAP-TAP keypads to the PC board. Please note that 'Channel A' is used for entrance into the organisation and 'Channel B' is used for exiting the organisation.
  3. Connect the display Ribbon connection to the PC board.
  4. Connect the speaker and microphone to the PC board.
  5. Connect the devices to the relays on the PC board that correspond with the relays you would like to open and close (Relays 1 and 2 have Normally closed).
  6. Connect the OBR harness to the OBR port on the PC board.
  7. Before connecting the power ensure that all 6 Earth points are connected and have a reading of 0 ohms. 1: Main to surge protector, 2: Connection to PC board, 3: Switch mode power supply to protector, 4: Connection to Back-plate, 5: Connection to Front-plate, 6: Connection from "Chassis" on PC board to earth wire. Test the 220V feed to ensure that it is within safe specifications (85 – 240VAC). Once safe to continue, connect the power supply to the MK II NS PC board.
  8. You have now completed connecting the MK II NS PC board. Once the power is connected to the intercom, the intercom display should turn on and you should now be able to see a "Welcome" message on the display.
  9. Dial \*#0020 on the keypad to verify your device is connected to the internet and has an IP address.
  10. Dial \*#0008 on the keypad to retrieve the device's serial number.
  11. You can now log onto Comb Portal and add the device to your organisation
    - Not sure how to add devices on Comb Portal? Visit the following link to view the user guide on "How to add devices to your organisation via Comb Portal"
- Link to user guide: <https://comb-communications.com/ns-portal-userguide>
12. Once completed, dial \*#0016 on the keypad to confirm the intercom is linked successfully.
  13. Visit the following link to view more information on our pricing and License fees: <https://comb-communications.com/license-fees/>

## ON-SIGHT REQUIREMENTS

The list mentioned below is required before going on sight

- POWER SUPPLY
- ETHERNET CABLE MAX 100 METERS
- INTERNET CONNECTION
- 1.2MM FLAT SCREWDRIVER
- ACTIVE VOIP ACCOUNT
- TAP-TAP KEYPAD (FOR EXIT PURPOSES)

## AC CONNECTION LAYOUT POWER SUPPLY (REQUIRED)



- 1: Switch mode power supply
- 3: PCB earth wire
- 5: Surge protector

- 2: 220V installation connection
- 4: LED light on surge protector

## MK II NS SUPERVISOR CODES

CODE	ACTION
*#0000	ALL CODES
*#0001	FIRMWARE VERSION
*#0004	REBOOT
*#0007	MODEM RECONFIG
*#0008	SERIAL NUMBER
*#0014	TAP STATUS
*#0019	MAINTENANCE AND TEMPER STATUS
*#0020	IP ADDRESS
*#7633	POWER OFF RESET.
*#0021	NETWORK WORK (N2TT
*#2000 *#2017	LANGUAGE
*#2099	LCD CHARACTER TEST
*#2836	AUDIO LOOPBACK
*#3284	DEBUG MODE
*#2437	ROUTES VIA LAN

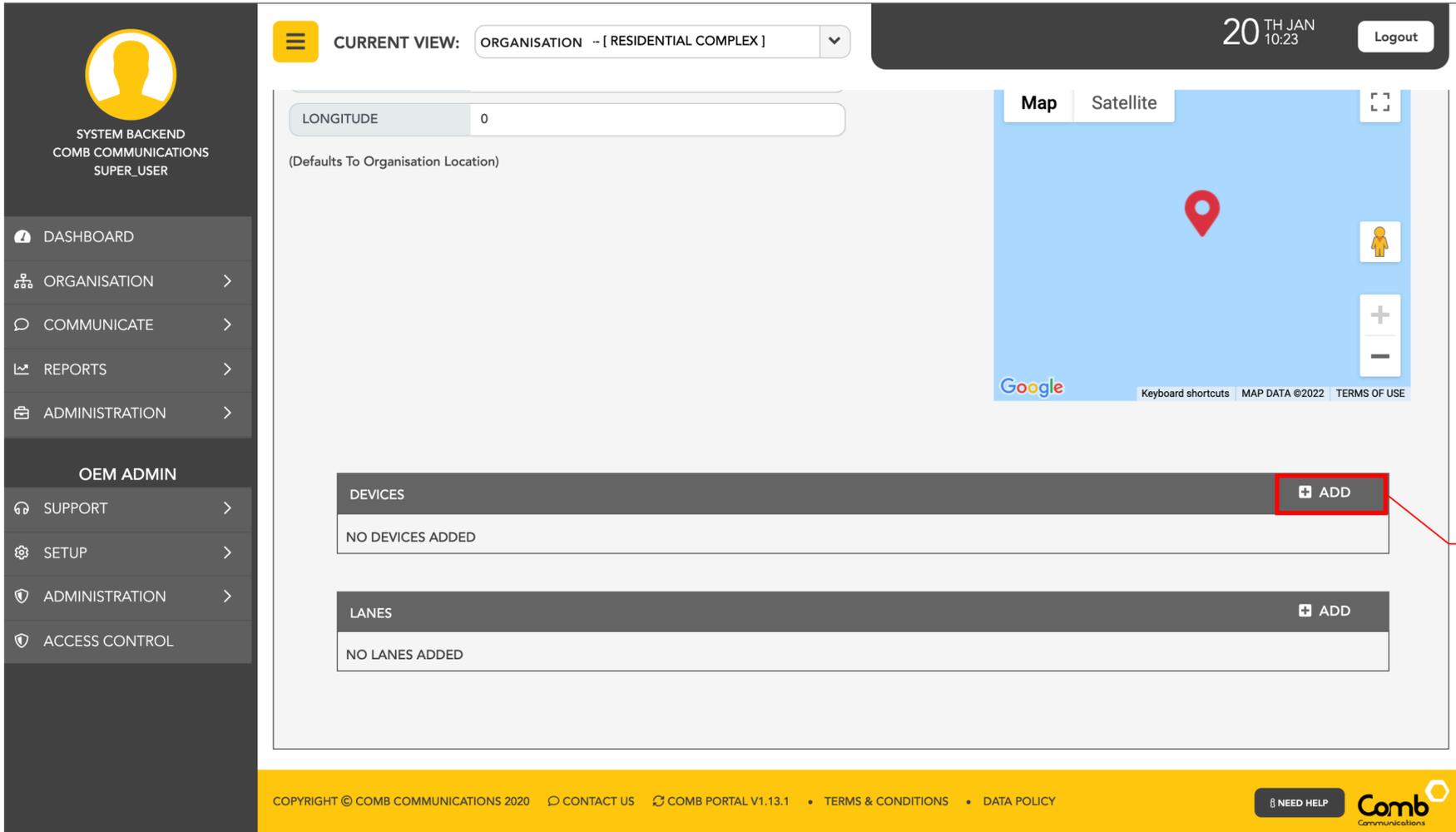
# ADDING A MK II NS DEVICE

The screenshot shows the Comb Portal dashboard for a residential complex. The side navigation menu on the left includes 'ACCESS CONTROL' at the bottom, which is highlighted with a red box and a red circle containing the number '1'. The main dashboard area displays 'King Willow 20' with 13 Units, 10 Participants, and 22 Authenticators. It features sections for 'ORG/ORGANISATION INFORMATION', 'GLOBAL HEALTH', 'MESSAGING', 'ORGANISATION DEVICES', 'RESIDENTIAL STATS', and 'LICENCES'. The footer contains copyright information and a 'NEED HELP' button.

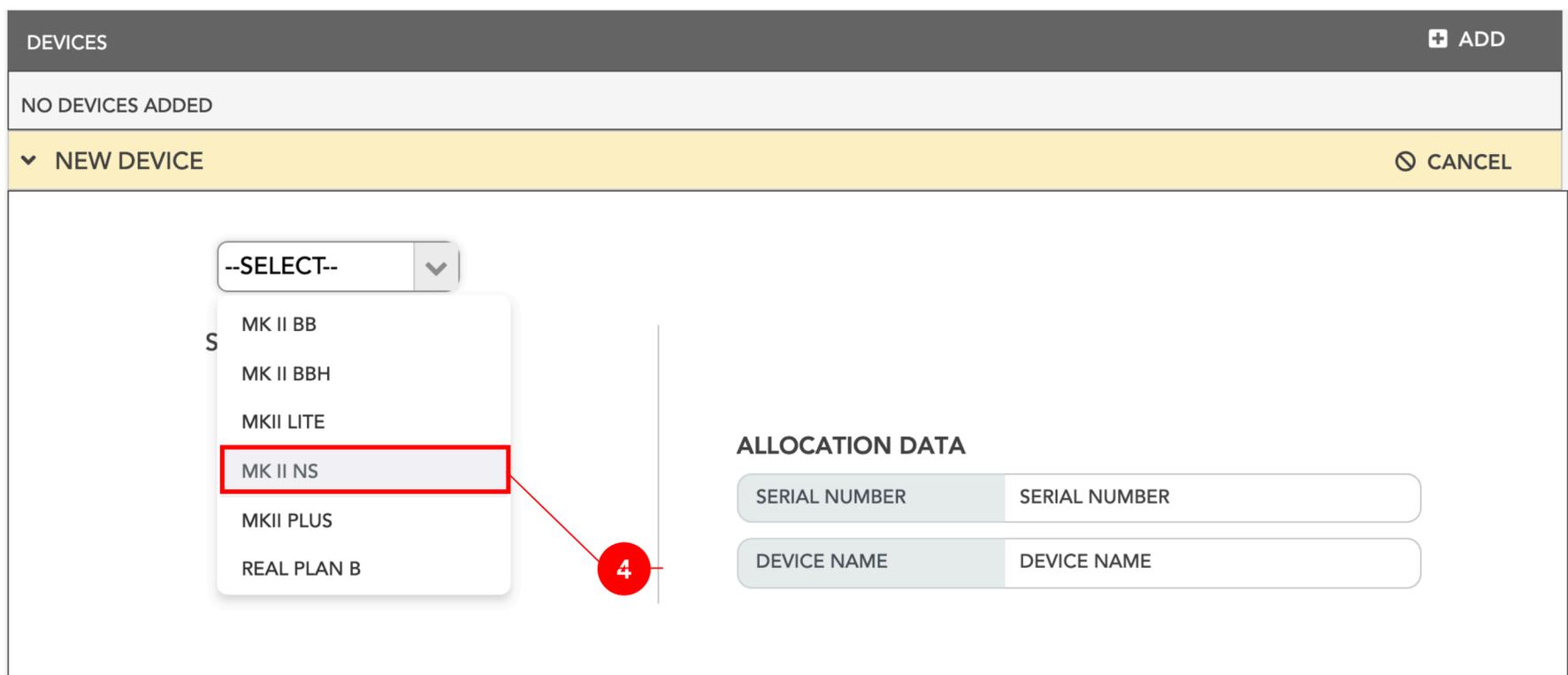
1: Start by logging into the Comb Portal and navigate to "Access control" from the side menu as indicated above.

The screenshot shows the 'ACCESS CONTROL' page in the Comb Portal. The breadcrumb trail is 'HOME / DASHBOARD / ACCESS CONTROL'. The page title is 'ACCESS POINTS AND LANES'. There are two main options: '+ NEW ACCESS POINT' and '> MAIN'. The 'MAIN' option is highlighted with a red box and a red circle containing the number '2'. The 'MAIN' option shows '0 LANES / 1 DEVICES'. The footer contains copyright information and a 'NEED HELP' button.

2: Navigate to the Access point that you would like to add the MK II NS device to. Alternatively you can create a new Access point by clicking the "+ADD ACCESS POINT" button on the top-right.



3: Click the “+ADD” button on the top-right hand side of the “DEVICES” component as indicated above to add a new device.



4: Click the drop-down button and locate the MK II NS device from the list as indicated above.

DEVICES
+ ADD

NO DEVICES ADDED

NEW DEVICE
CANCEL

MK II NS



**MK II NS**

	MANUFACTURER:	COMB
	DEVICE FAMILY:	INTERCOM
	FIRMWARE TYPE:	MK II NS
	DISPLAY:	DISPLAY 16 X 2

SELECT DEVICE

**ALLOCATION DATA**

Complete the fields below and click '+ ADD DEVICE' to add the selected device.

SERIAL NUMBER

DEVICE NAME

+ ADD DEVICE

5: Configure and complete the required fields:

**Serial number:** The identification number printed on the manufactured device.

**Device Name:** The name that you would like the MK II NS device to be called.

Once completed, click the "+ ADD DEVICE" button to add your MK II NS device.

DEVICES
+ ADD

TEST NS
SAVE DELETE



**TEST NS**

	MANUFACTURER	COMB
	DEVICE FAMILY	INTERCOM
	FIRMWARE TYPE	MK II NS
	DISPLAY	DISPLAY 16 X 2

 FULL SYNC

 REBOOT

 UNLINK

 SSH CONNECT

**ALLOCATION DATA**

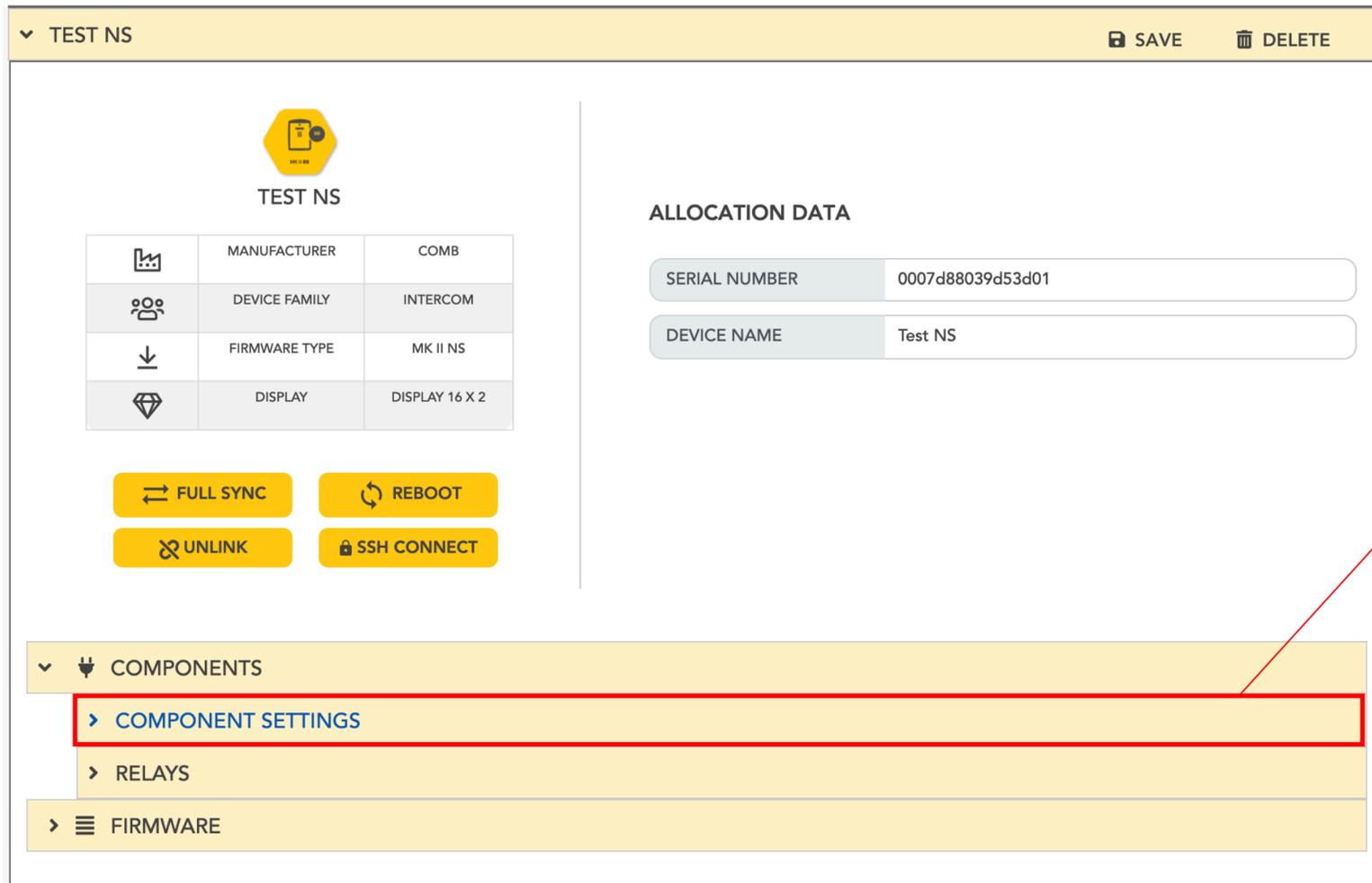
SERIAL NUMBER

DEVICE NAME

COMPONENTS

FIRMWARE

Congradulations! Your MK II NS should be added successfully as indicated above.



TEST NS

MANUFACTURER	COMB
DEVICE FAMILY	INTERCOM
FIRMWARE TYPE	MK II NS
DISPLAY	DISPLAY 16 X 2

ALLOCATION DATA

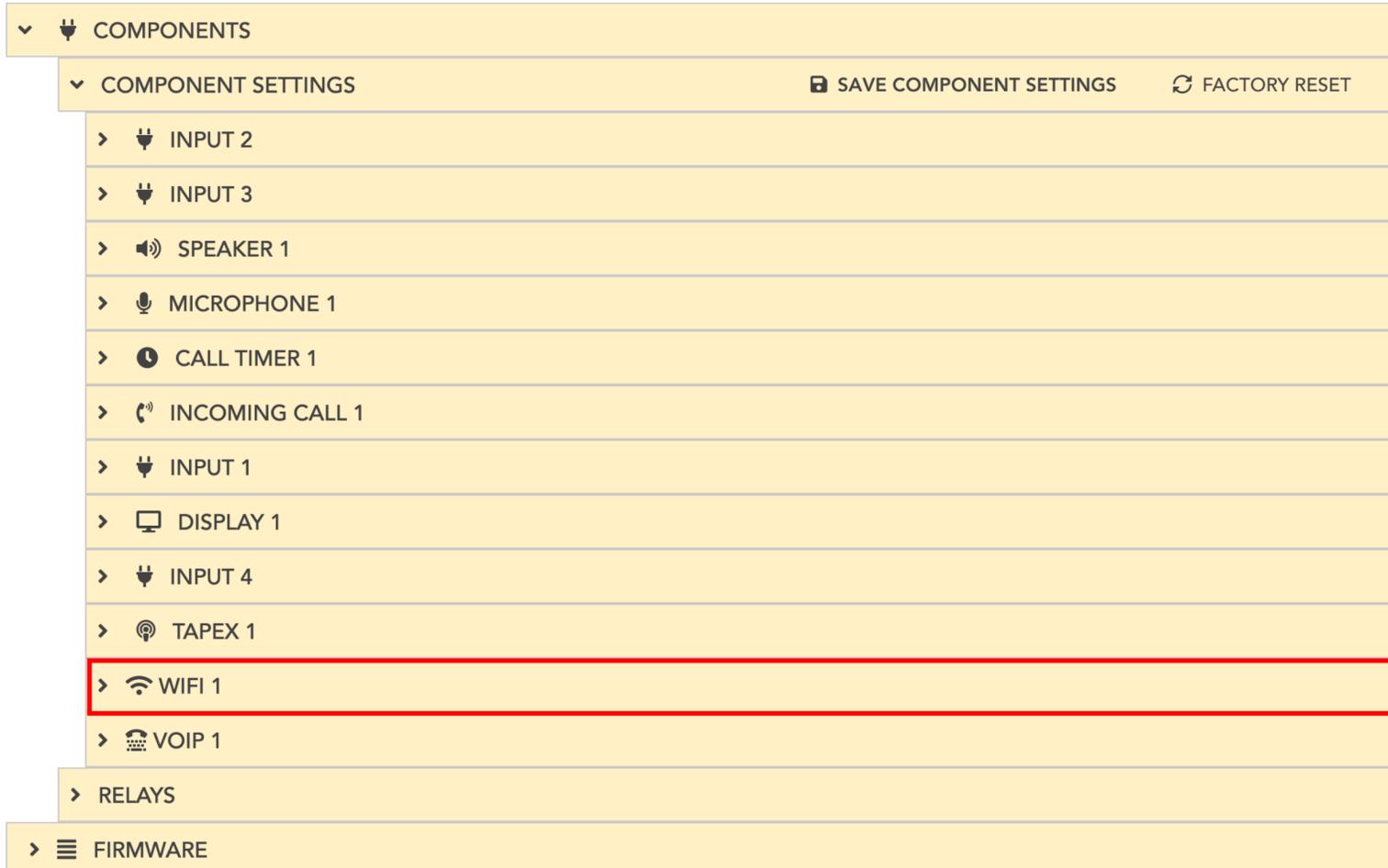
SERIAL NUMBER: 0007d88039d53d01

DEVICE NAME: Test NS

COMPONENTS

- COMPONENT SETTINGS
- RELAYS
- FIRMWARE

1: On the newly created MK II NS device, click on the "COMPONENTS" accordion, followed by clicking the "COMPONENT SETTINGS" accordion as indicated above to navigate to the MK II NS component settings.

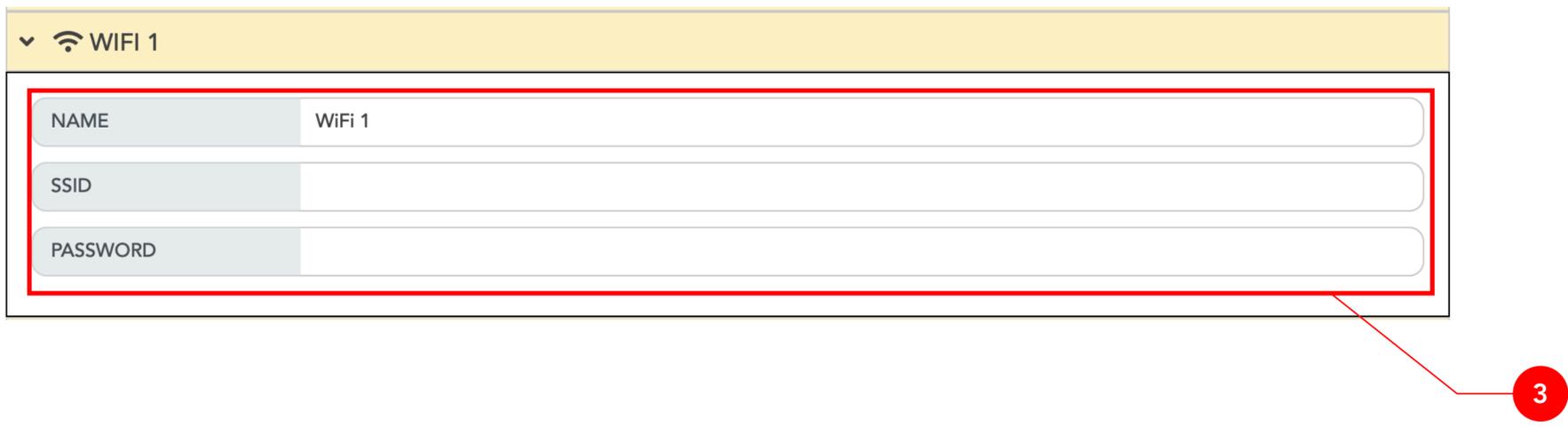


COMPONENT SETTINGS

SAVE COMPONENT SETTINGS | FACTORY RESET

- INPUT 2
- INPUT 3
- SPEAKER 1
- MICROPHONE 1
- CALL TIMER 1
- INCOMING CALL 1
- INPUT 1
- DISPLAY 1
- INPUT 4
- TAPEX 1
- WIFI 1
- VOIP 1
- RELAYS
- FIRMWARE

2: The device component settings will drop down, navigate and click on the "WIFI" setting as indicated above to expand the WIFI settings accordion.




3: Configure and complete the required fields:

**Name:** The name that you would like to call the WIFI settings

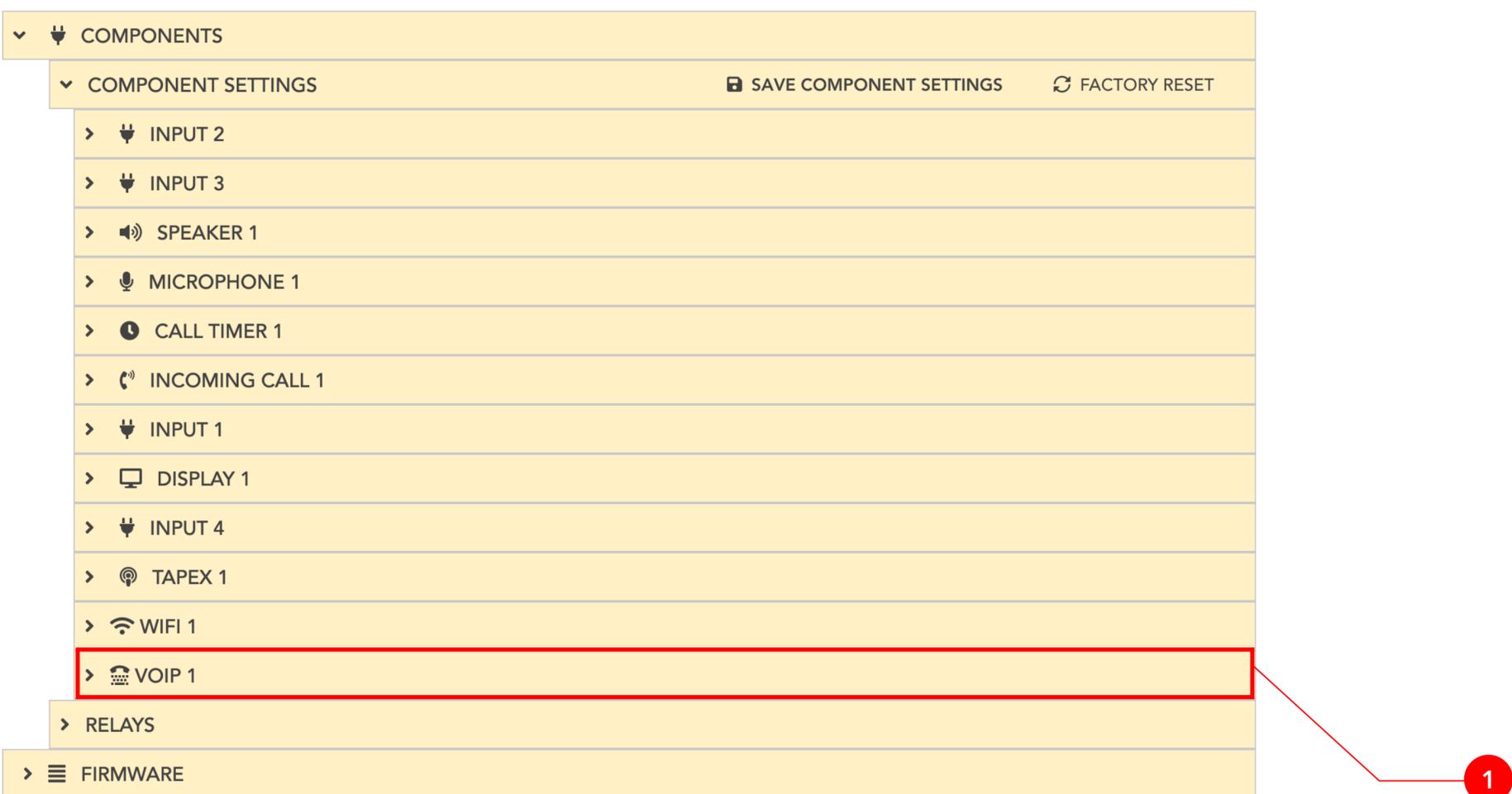
**SSID:** SSID stands for Service Set Identifier. This is the unique name that identifies a wireless network (The name of the router you are connecting to).

**Password:** The password of the router you are connecting to

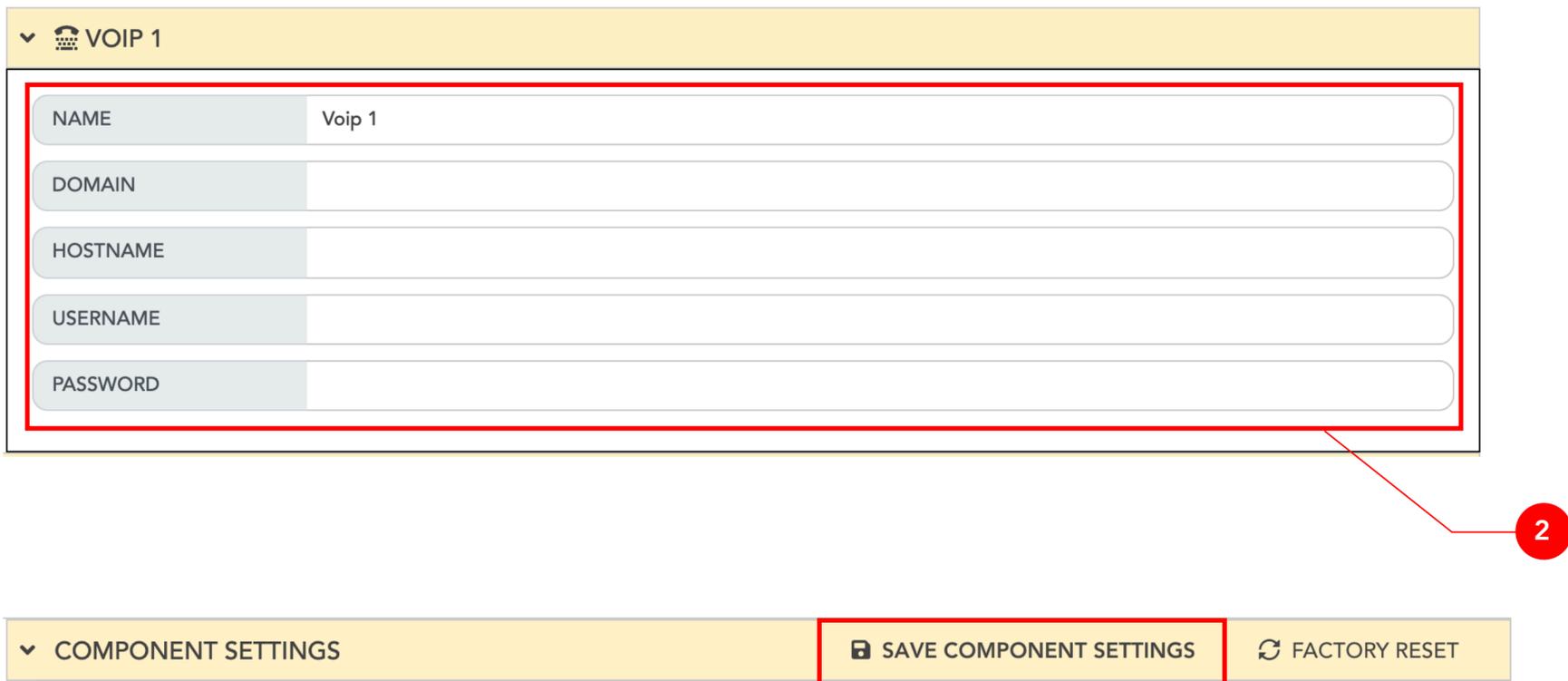
Once completed, click the "SAVE COMPONENT SETTINGS" button to apply your changes.

Congradulations, you have successfully set up your MK II NS Wifi configurations!

## CONFIGURE VOIP SETTINGS



1: Click and expant the device component settings and navigate to the "VOIP" setting as indicated above to expand the VOIP settings accordion.

A screenshot of a web-based configuration interface for a device. At the top, there is a yellow header bar with a dropdown arrow and the text "VOIP 1". Below this is a form with five input fields: "NAME" (containing "Voip 1"), "DOMAIN", "HOSTNAME", "USERNAME", and "PASSWORD". A red rectangular box highlights the entire form area. Below the form is another yellow header bar with a dropdown arrow and the text "COMPONENT SETTINGS". To the right of this bar are two buttons: "SAVE COMPONENT SETTINGS" (with a lock icon) and "FACTORY RESET" (with a refresh icon). A red circle with the number "2" is positioned to the right of the form, with a red line pointing to the bottom right corner of the form's red box.

2: Configure and complete the required fields:

**Name:** The name that you would like to call the VOIP settings

**Domain:** The IP address that points to the location of your VOIP account.

**Hostname:** The hostname is what a device is called on a network.

**Username:** The username of your VOIP account.

**Password:** The password of your VOIP account.

Once completed, click the "SAVE COMPONENT SETTINGS" button to apply your changes.

**Congratulations, you have successfully set up your MK II NS VOIP configurations!**

# Lane configuration setup

1. Add a device by clicking "ADD" and selecting the MK II NS from the drop-down box. Enter the Serial number, device name and click "save".

The screenshot shows the 'LANES' configuration page. At the top right, there is an 'ADD' button (callout 3). Below it, there are 'SAVE' and 'DELETE' buttons. The 'LINKED DEVICES' section shows a device named 'GHOST LITE - RELAY 1' with a 'LINK DEVICE' button (callout 2). Below this, there is a section for 'AUTHENTICATOR (REMOTES, PIN, TAP, BIOMETRICS, CLI, RFID)' with a '+ ADD' button (callout 4). The authenticator table has columns for AUTH TYPE, QUALIFIER, ROLE, TIMEGRID, DESCRIPTION, and ACTION. The first row in the table has 'MOBILE' as AUTH TYPE, 'MOBILE BTN 1' as QUALIFIER, 'OCCUPANT' as ROLE, 'ALL TIMES' as TIMEGRID, and 'Mobi Trigger' as DESCRIPTION. The footer contains copyright information and the Comb Communications logo.

AUTH TYPE	QUALIFIER	ROLE	TIMEGRID	DESCRIPTION	ACTION
MOBILE	MOBILE BTN 1	OCCUPANT	ALL TIMES	Mobi Trigger	+ ADD
CLI	NOT APPLICABLE	OCCUPANT	ALL TIMES	CLI Occupant	DELETE
CLI	NOT APPLICABLE	OWNER	ALL TIMES	CLI Owner	DELETE
REMOTE	REMOTE CONTROL B	OCCUPANT	ALL TIMES	Remote BT 1 Occupant	DELETE

2. Add a new lane or open an existing lane and link the MK II NS device to that lane.

3. Click "ADD DEFAULT AUTHENTICATORS" and select all the default authenticators you would like to add.

4. Alternatively add your authenticators manually via the authenticators table as indicated above.