IRIDIUM Mono/Dual AM 58KHz System

Technical documentation, installation instructions

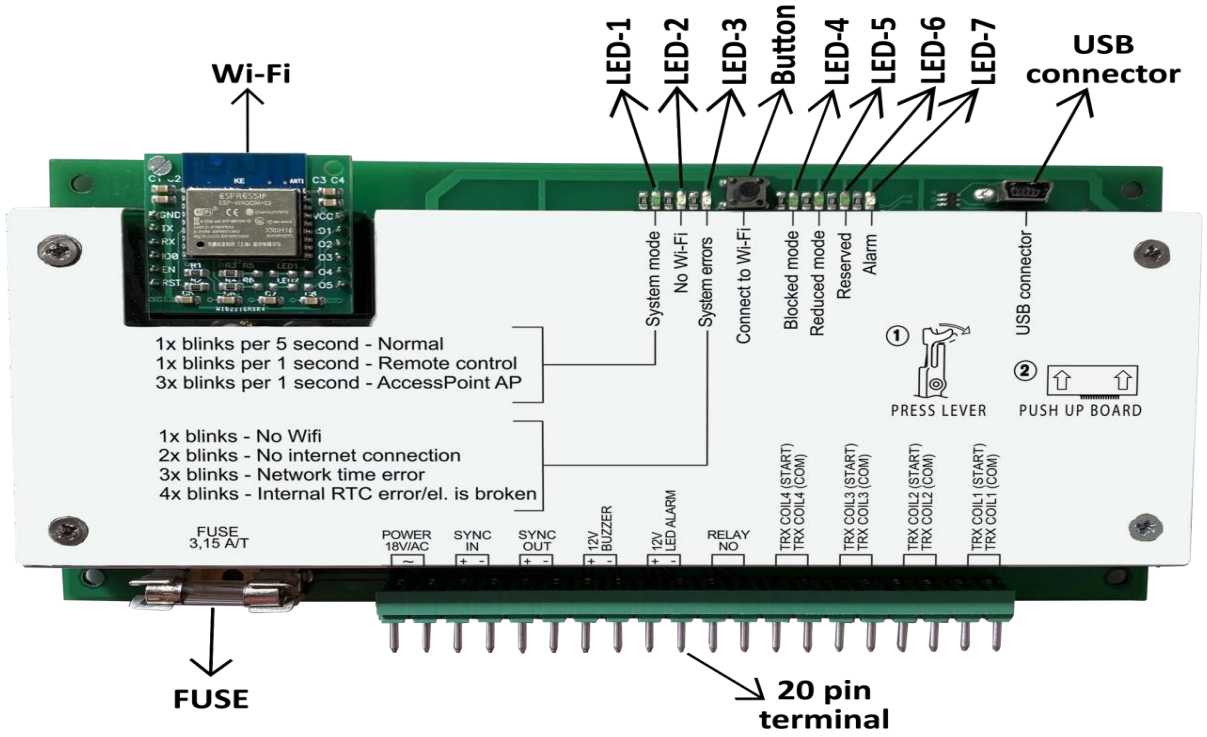
IRIDIUM SIGMA 58KHz

Contents

2. Technical parameters

Type designation	IRD S100 V1 AM
Commercial designation	IRIDIUM SIGMA
58KHz	
Producer	IRIDIUM LTD, spol. s r.o.,
SlovakiaWorking frequency range	58KHz
Output voltage from AC / AC adapter	**18V AC 60W 50Hz or 60Hz**
Dimensions	height: 162,5cm width: 40,4cm depth:
9,2cmAlarm signalization	optical (LED diodes), acoustic (piezo-siren)

3. AM Electronic board description



3.1 Description of terminal pins

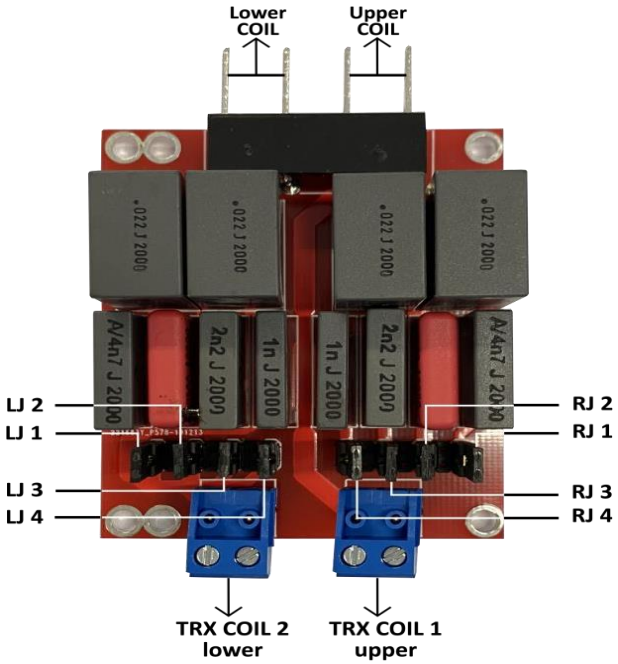
POWER 18V/AC	supply voltage input from power adapter
SYNC. IN	terminal for connecting of synchronization input in case ofMASTER–SLAVE installations
SYNC. OUT	terminal for connecting of synchronization output in case ofMASTER–SLAVE installations
12V	plus power pole for connecting of acoustic alarm signalization (piezo-siren)
Buzzer	minus power pole for connecting of acoustic alarm signalization(piezo-siren)
12V	plus power pole for light alarm signalization
ALARM	minus power pole for for light alarm signalization
RELAY	relay switching contacts
TRX COIL4 (START)	lower loop of slave antenna START

TRX COIL4 (COM) lower loop of slave antenna COMMON**TRX COIL3 (START)**upper loop of slave antenna START **TRX COIL3 (COM)** lower loop of slave antenna OMMON **TRX COIL2 (START)**lower loop of master antenna START **TRX COIL2 (COM)** lower loop of master antenna OMMON**TRX COIL1 (START)** lower loop of master antenna START **TRX COIL1 (COM)** lower loop of master antenna OMMON

3.2 Description of LED signaling, USB connector

LED-1	System mode 1x blinks per 5 sec- Normal mode 1x blinks per 1 sec- Remote control3x blinks per 1sec - Access Point
LED-2	Process run
LED-3	System errors 1x blinks - Ni WiFi 2x blinks - No internal connection3x blinks - Network time error 4x blinks - internal RTC error / el. Is brokenButton Connect to WiFi
LED-4	Blocked mode
LED-5	Reduced mode
LED-6	Reserved
LED-7	A

4. Capacitor board description



4.1 Loops wire description

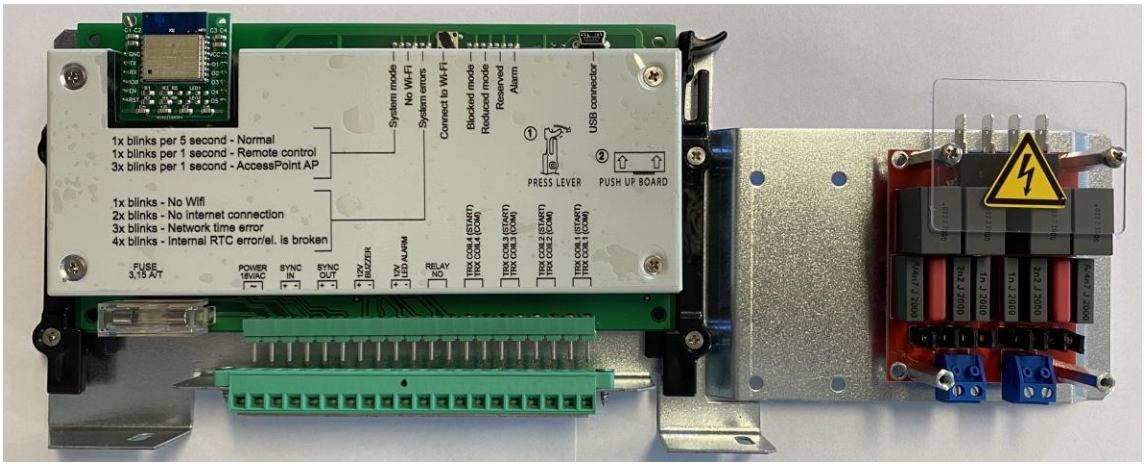
Lower coil - pins for connection of lower wire loop
Upper coil - pins for connection of upper wire loop
LJ 1, LJ 2, LJ 3, LJ 4 - jumpers for lower wire loop setting
RJ 1, RJ 2, RJ 3, RJ 4 - jumpers for upper wire loop setting

Setting procedure provide produced.

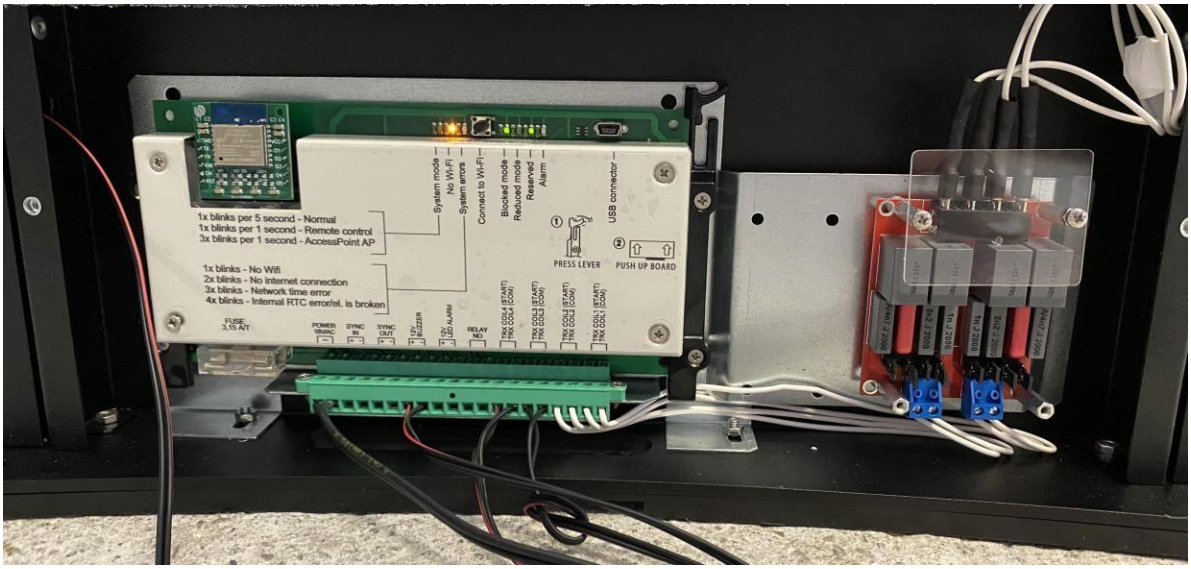
TRX COIL 1 - connection wire to corresponding pins on 20-pin terminal on AM el.TRX COIL 2 - connection wire to corresponding pins on 20-pin terminal on AM el.

Slave antenna capacitor board
TRX COIL 3 - connection wire to corresponding pins on 20-pin terminal on AM el.TRX COIL 4 - connection wire to corresponding pins on 20-pin terminal on AM el.

5. Plug-in mechanism & electronic boards in Master antenna

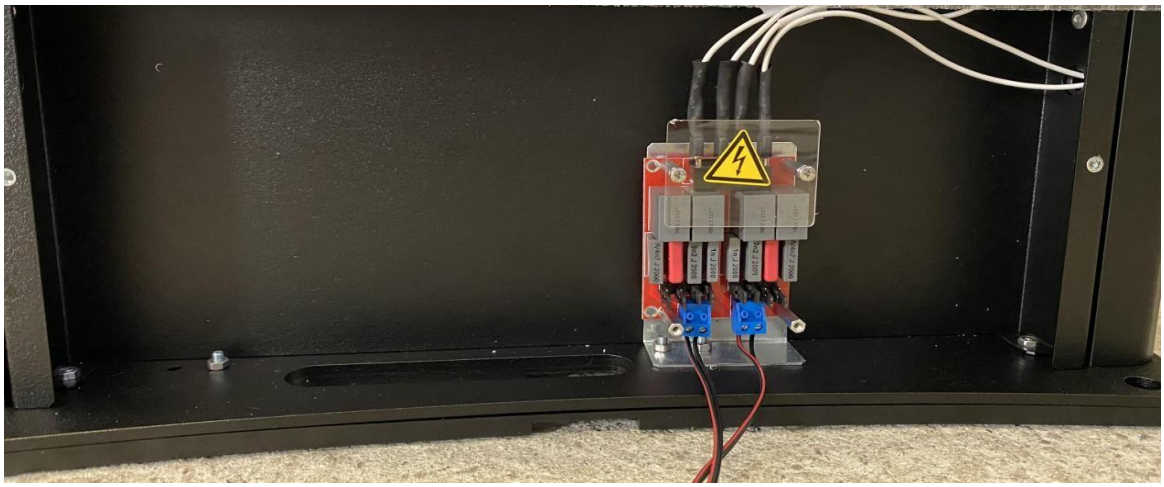


5.1 Wire connection on Master Antenna



For the connection between Master and Slave antenna we recommend touse 2x 2-core wire with the core cross section 0,7

5.2 Wire connection on Slave antenna



6. Installation of AM IRD System

No special equipment (such as an oscilloscope) is required to install the IRD system.

Recommended tools for single-antenna installation:

- Drill
- Screwdriver
- Pliers
- Mounting materials (screws, anchors)

For multiple-antenna installations:
A synchronization cable is needed to connect the antennas.
If the customer prefers to hide this cable, use surface-mounted cable ducts with clips and screws. Alternatively, the cable can be embedded in the floor. In that case, you may need a floor saw, a strong vacuum cleaner, and a suitable filler (such as silicone or cement), depending on the type of flooring.

Make sure to have **sample tags or labels** ready to test detection range after installation.

- **Important warning:**
  DO NOT MOVE OR CHANGE JUMPER POSITIONS ON THE CAPACITOR BOARD!

6.1 Wi-Fi Setup and Synchronization

After After the antennas are installed (securely fixed to the floor, connected to the power supply, and linked for synchronization in dual systems), connect to the antenna using either **USB** or **Wi-Fi**.

Wi-Fi Setup for Iridium EAS Security Antennas

🔻 STEP 1: Activating the Hotspot on Your Phone

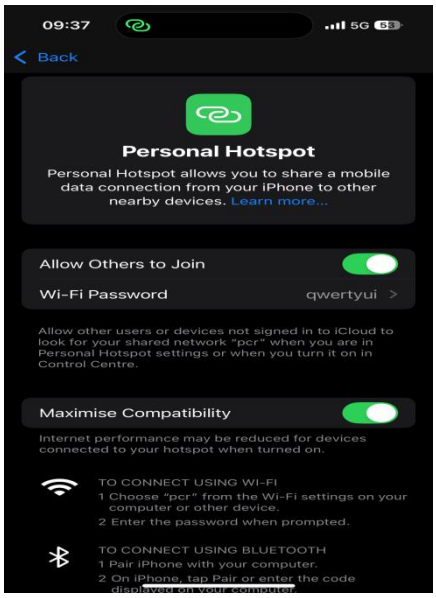
Purpose: Temporarily connect the antennas to a mobile hotspot with a predefined SSID and password.

Default values in the electronics:

- **SSID (network name): pcr**
- **Password: qwertyui**

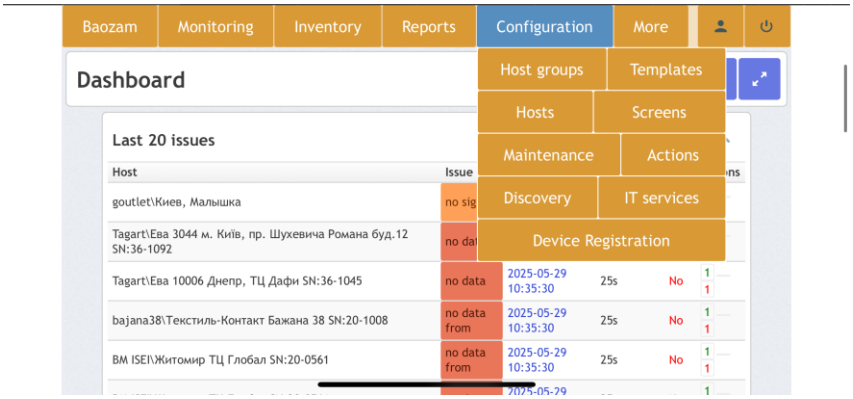
Instructions:

1. Open **Settings > Personal Hotspot** on your phone.
2. Enable **Allow Others to Join**.
3. Set the hotspot password to: **qwertyui**.
4. Change the network name (SSID) to **pcr**.
5. Enable **Maximise Compatibility**.

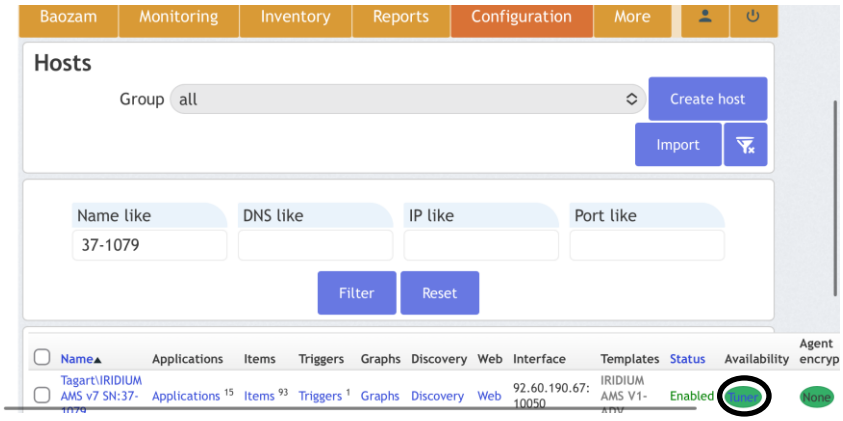


🔻 STEP 2: Access Baozam.net and Select the Device

1. Open your browser and go to: **https://baozam.net**
2. From the top menu, select **Configuration > Hosts**.

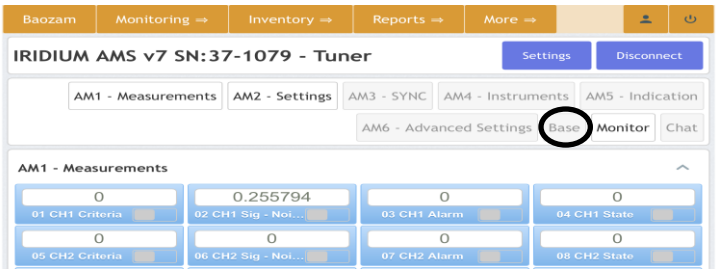


3. In the **Name like** field, enter the **serial number** of the Wi-Fi module (e.g. 37-1079).
4. Click **Filter**.
5. Once the device appears, click the green **Tuner** button on the right side.

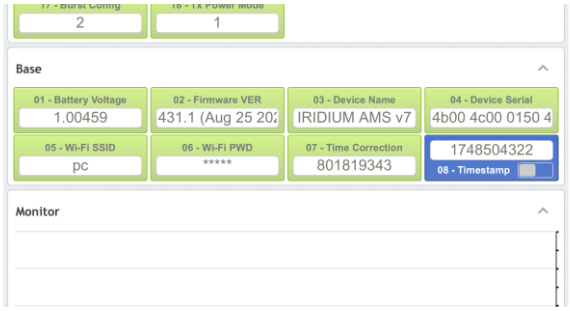


⯅ STEP 3: Enter Wi-Fi Network Details

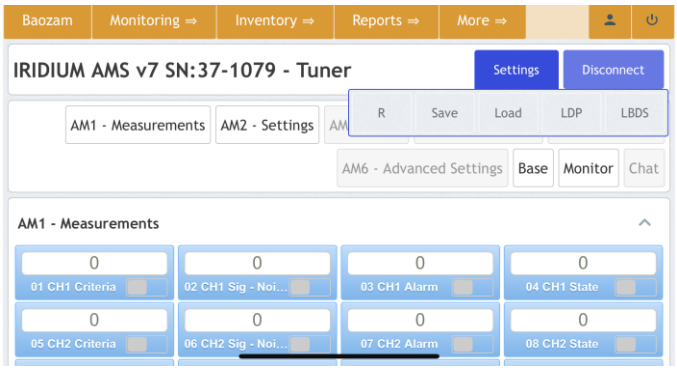
1. At the top of the interface, click on the **Base** tab.



2. In field **05 – WiFi SSID**, enter the store's network name (e.g. Store_123) and press **Enter**.
3. In field **06 – WiFi PWD**, enter the password for the store's network and press **Enter**.



4. Click on **Settings > Save**



🔻 STEP 4: Save the Details Again (Hard Write)

Some devices do not connect on the first attempt. Therefore, the Wi-Fi settings must be entered and saved again:

1. Re-enter the same values in **WiFi SSID** and **WiFi PWD**.
2. Click **Save** again.

🔻 STEP 5: Restart and Verify the Connection

1. **Turn off the hotspot** on your phone.
2. **Restart all antennas** – unplug them from the power source and plug them back in.
3. **After restarting, check in Baozam if the antenna reconnects and shows as active.**

🔻 TIP: Setting Up Multiple Antennas Simultaneously

If there are **multiple antennas on-site** (e.g. 5 units), you can complete the process for all of them at once:

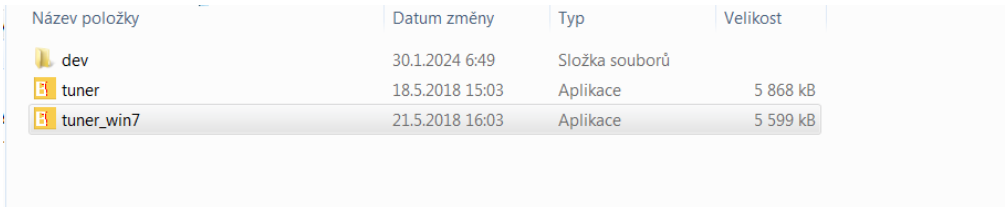
- **Activate the hotspot only once.**
- The antennas will automatically connect one by one.
- In your browser, **open each antenna's interface in a separate tab or window**.
- Once they appear online, configure the Wi-Fi details individually for each antenna.

Wi-Fi Setup via USB Connection

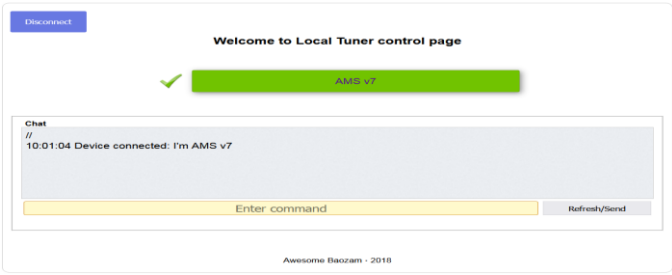
This method is used when you want to configure the Wi-Fi connection directly through a computer using a micro USB cable, without the need for a hotspot.

Procedure:

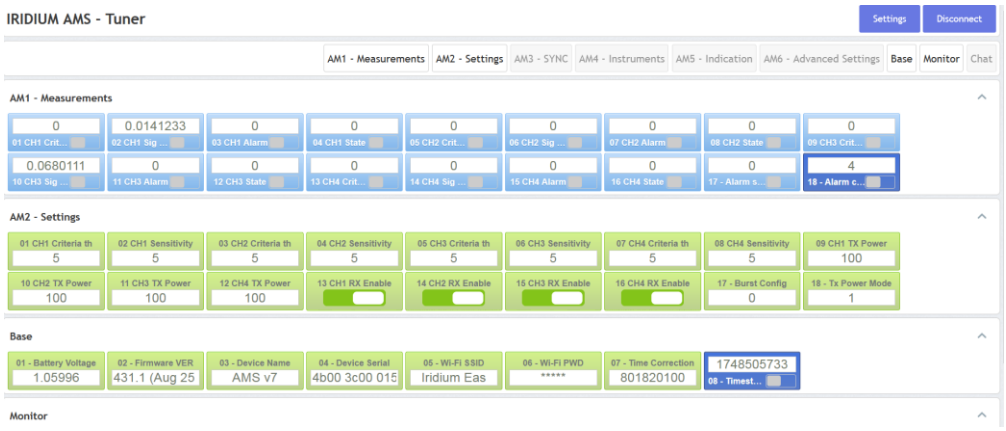
1. Connect the micro USB cable between the AM electronics and your computer.
2. Open the "Tuner_Iridium" software on your computer
3. Click the Tuner button



4. A connection window will appear:
   - If the window is green, you can proceed by clicking it.
   - If the window is gray (inactive):
     - Disconnect the USB cable from the computer
     - Wait a few seconds and reconnect it
     - Then click Refresh/Send



5. After refreshing, the window should turn green – this means the device was successfully recognized.
6. Click the green window – the software will now display the interface of the connected electronics



Entering Wi-Fi Network Information:

1. At the top, click on the Base tab.
2. In field 05 – WiFi SSID, enter the store's network name (e.g., Store_123) and confirm with Enter.
3. In field 06 – WiFi PWD, enter the network password and confirm with Enter.
4. Click Settings > Save

◆ STEP 4: Redundant Data Saving

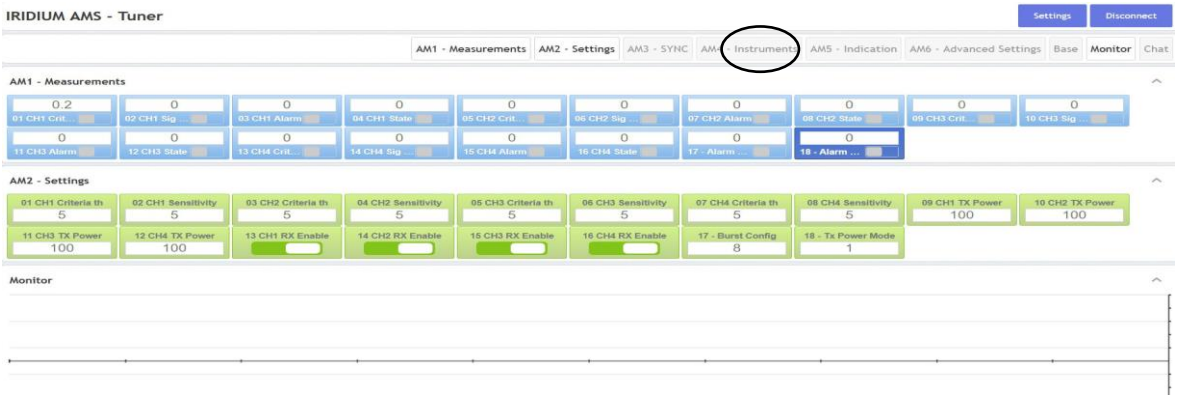
Some devices may not connect on the first try, so it's necessary to save the data again:

1. Re-enter the same values in fields 05 – WiFi SSID and 06 – WiFi PWD.
2. Click Save again.

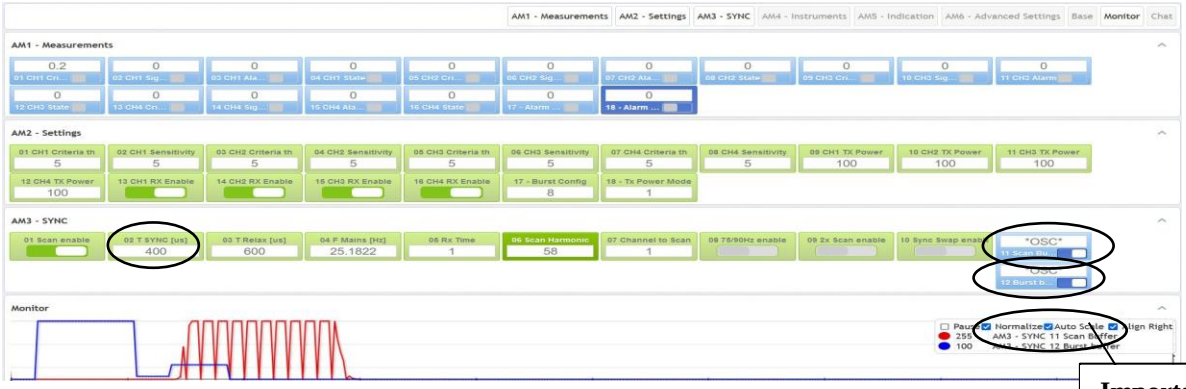
◆ STEP 5: Restart and Connection Verification

1. Disconnect the device from USB.
2. Restart all antennas – power them off and on again.
3. After restarting, check the Baozam portal to see if the antenna has connected and appears as active.

Antennas synchronization



Open the AM3-Sync window in the top bar.



Important!
Enable Normalize and Auto scale.

Turn on **01 Scan Enable** and oscillators **11** and **12**.

A graph will appear showing the position of your antenna (**blue**) and the other nearby antenna (**red**). Your antenna is represented by two squares. The **smaller square must always be placed in free space** — it must not overlap with the red antenna.

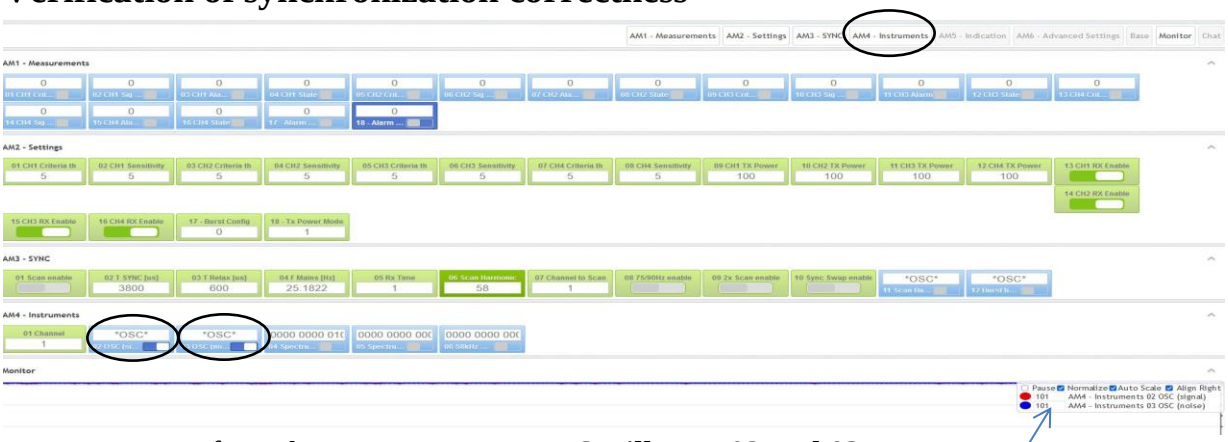
To adjust the position of your antenna, use the setting **02 T Sync**:

- Increasing the value moves your antenna **to the right** on the graph.

This adjustment is essentially a **reversal of synchronization polarity** with respect to the power network — similar to flipping a plug in the socket.

In the picture, you can see the change in the position of our antenna. I have changed the value of 02 T Sync. Once the **small square is placed in free space**, the antenna is correctly synchronized. Finally, turn off **Scan Enable** and oscillators **11** and **12**.

6.2 Verification of synchronization correctness



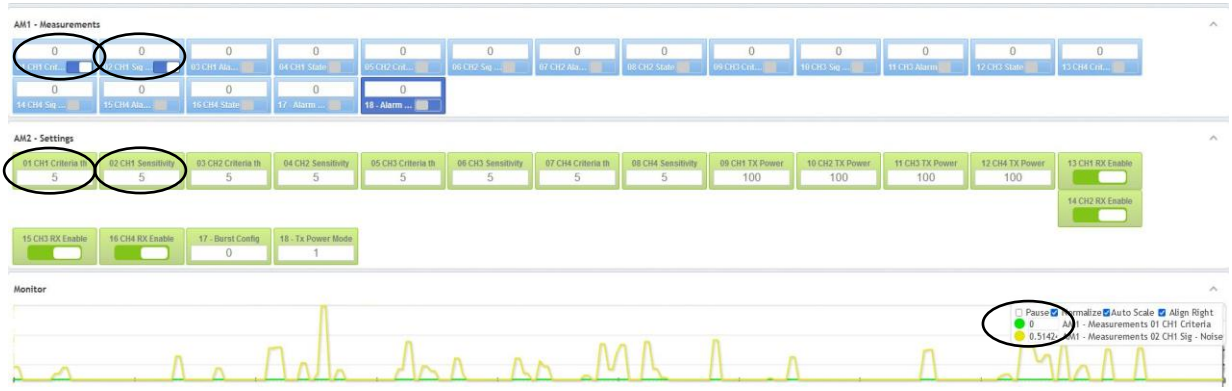
Open **AM4-Instruments** from the top menu. Turn on **Oscillators 02 and 03**.

The graph will show the values of both oscillators. If **Oscillator 02** and **Oscillator 03** display the **same value (e.g., 101–101)**, then the synchronization is correct.

If the values differ slightly, turn off Oscillators 02 and 03, return to the synchronization menu, and **adjust the value of 02 T Sync slightly**. Then repeat the verification process.

In the picture, you can see that the values are higher than 101 and not the same. In this case, it is necessary to adjust the synchronization.

7. Checking the noise level around the antennas



Final Step: Checking the Noise Level

The last step of the installation is to **check the noise level around the antennas**.

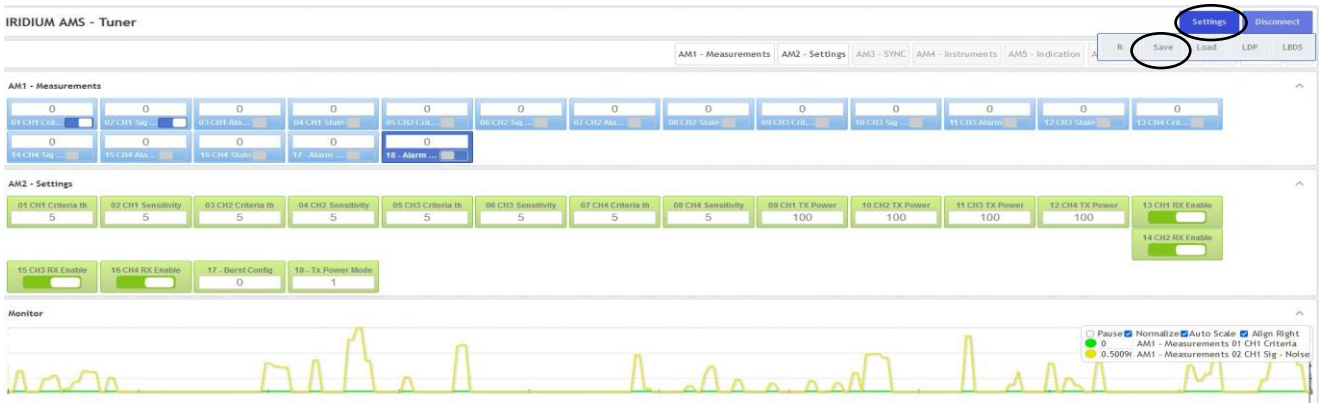
1. In the **AM1-Measurements** module, enable:
   - **01 – CH1 Criteria**
   - **02 – CH1 Signal**
2. Review the graph in the lower-right corner of the screen:
   - The **CH1 Criteria** value should normally be **0**.
   - If the value on the graph is **higher than 5**, false alarms may occur.
   - In this case, go to **AM2-Settings > CH1 Criteria th** and set the threshold to match the value shown on the graph.
   - **Example:** If the graph shows a value of **6**, enter **6** as the threshold.
   - *Higher values reduce false alarms but also decrease detection range.*
   - **Note:** The default threshold value of **5** should **not be lowered**. It should only be adjusted **if the measured value exceeds 5**.
3. The second value, **02 – Signal (Noise)**, shows the environmental noise level.
   - If this value is too high (e.g. **7.2**), reduce detection sensitivity in **AM2-Settings > CH1 Sensitivity**.
   - **Example:** If the graph shows 7.2, set the sensitivity to **7**.
   - *Higher sensitivity values offer more false alarm protection, but reduce detection performance.*
4. Repeat this check for **all active channels**.
   - To inspect **channel CH2**, open **windows 05 and 06**.

In about 80% of installations, these values do not need to be changed — correct synchronization is usually sufficient.

Important warning:

DO NOT CHANGE Burst config settings. (AM2 – 17 burst config). The value must be

8. Saving settings



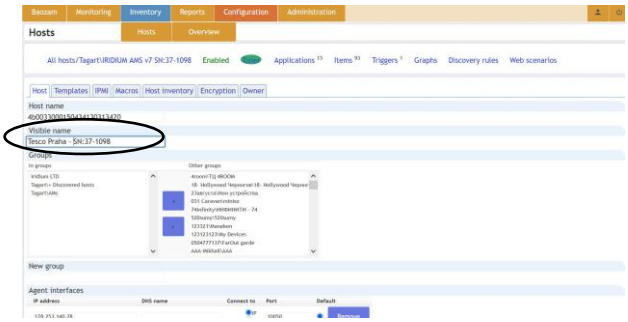
After successfully setting up the antenna, we need to save the changes made. Click on "Settings" in the top right window and then on "Save".

Note: After entering or changing any value, you must always press the Enter key to confirm the input!

9. Changing the Device Name in the Baozam Cloud

1. Go to the main menu in Baozam and navigate to: **Confguration – host**
2. In the search field, enter the current device name (e.g., 37-1098) and click **filter**.

3. Once the device appears, click on its current name to open the settings
4. In the **Visible Name** field, you can change the display name (e.g., Tesco Praha – SN:37-1098). **Please do not remove the SN from the name**



5. Scroll all the way down and click **Update**. The changes will now be saved.