

**GETTING STARTED: PAIRING
REACH RS WITH COMPUTER/
MOBILE PHONE**

OBJECTIVE

- To pair a computer/phone with the REACH RS so you can operate it.

Result of successful pairing: Status window is displayed

The screenshot displays the REACH RS software interface. On the left is a dark sidebar with navigation options: Status, Survey, RTK settings, Correction input, Position output, Base mode, Logging, Wi-Fi/Bluetooth, and GNSS predictor. The main area is divided into several sections:

- Status:** A bar chart titled "Signal-to-noise ratio" showing values for various satellites (G17, G18, G02, G05, G06, G12, G19, G15, G20, G25, G29, R06, R07, R19, R20, R21). A green box highlights the chart with the text: "These bars indicate the quality of reception, red means poor, green is good (usually more than 40)".
- RTK parameters:** Shows "0.0 s" for age of differential, "0.0" for AR validation ratio, and "0.00 m" for baseline.
- Positioning mode:** Set to "Kinematic".
- Position:** Shows 0° latitude, 0° longitude, and 0 m height.
- Velocity:** Shows 0 m/s East, 0 m/s North, and 0 m/s Up.
- Base position:** Shows 0° latitude, 0° longitude, and 0 m height.
- Map:** A map showing the device's location with a black circle and red dots. A green box highlights the map with the text: "You will see a map indicating the location of your REACH RS, with a black circle meandering around, getting the fixes on its location as indicated by the red dots. If you are under a shade, it can take 10 or 20 minutes, faster in the open." Another green box highlights the device's position with the text: "Position is reasonably accurate".

A green box in the top right corner of the interface contains the text: "This is the version of the ReachView. If an update is required, there will be an instruction from REACH RS to do so, when you connect to it." A version number "v2.9.2" is visible in the top right corner.

PREPARATION

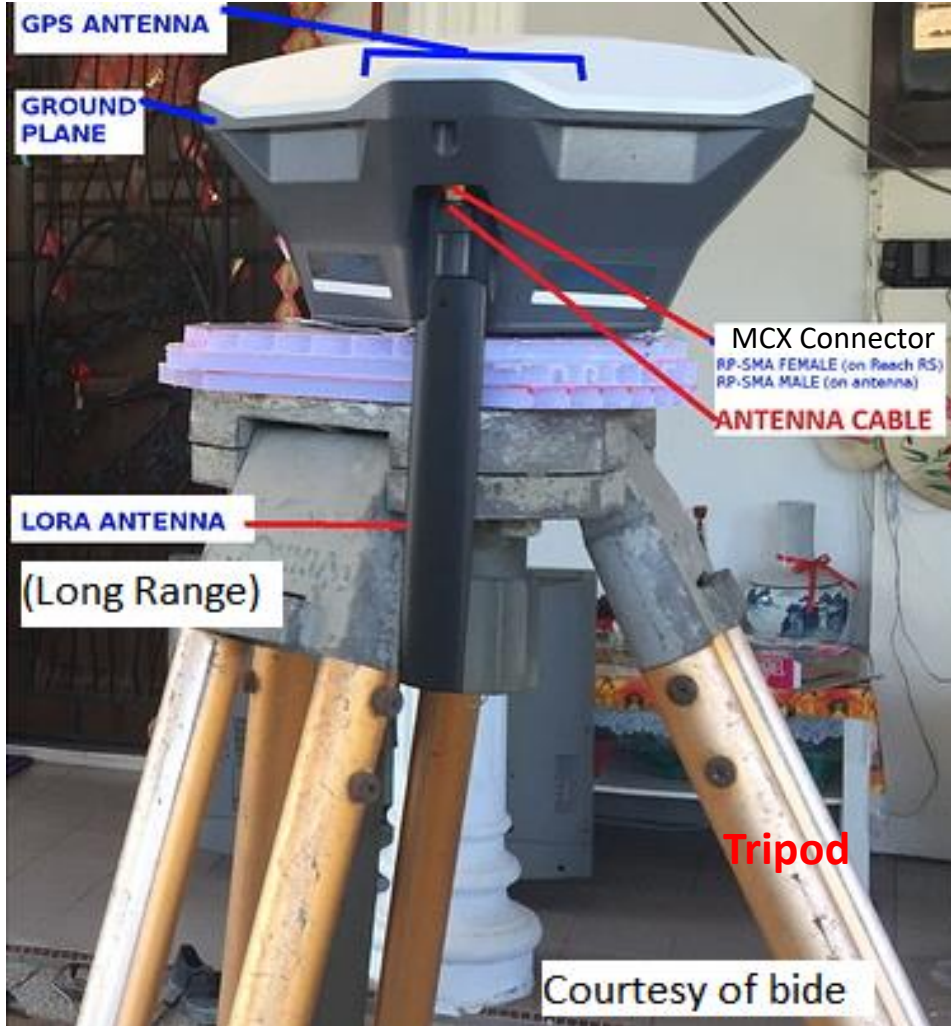
What do you need:

1. A mobile computing device with Wi-Fi access - laptop, tablet or smart phone, something light you can carry in the field.
2. Reach RS documentation (hardcopy is easier to refer): <https://docs.emlid.com/reachrs/>
3. 2 units of Reach RS, one for the Base and the other for the Rover. Label them and the case with stickers for clarity.
4. A level foundation to hold the Base firmly. It can be a tripod. For the Rover, it can be a more mobile aid such as a rod with a levelling bubble attachment.
5. Only 1 Wi-Fi operating at any one time to avoid unforeseen problems. In my case, a Robo-vacuum emitting Wi-Fi signals gave me a lot of grief.

Here we are pairing a laptop with Windows 10 and an iPhone with its own mobile data.

- Note: Reach and Reach RS are different. For Reach, go to <https://docs.emlid.com/reach/>
- Get ready your network name and password for your laptop or iPhone.
- Each Reach RS has its own network, eg reach:xx:xx. The password is emlidreach.
- Pairing can be done in the shade. Not necessary in the open or the field.

ACCESSORIES & TERMINOLOGY



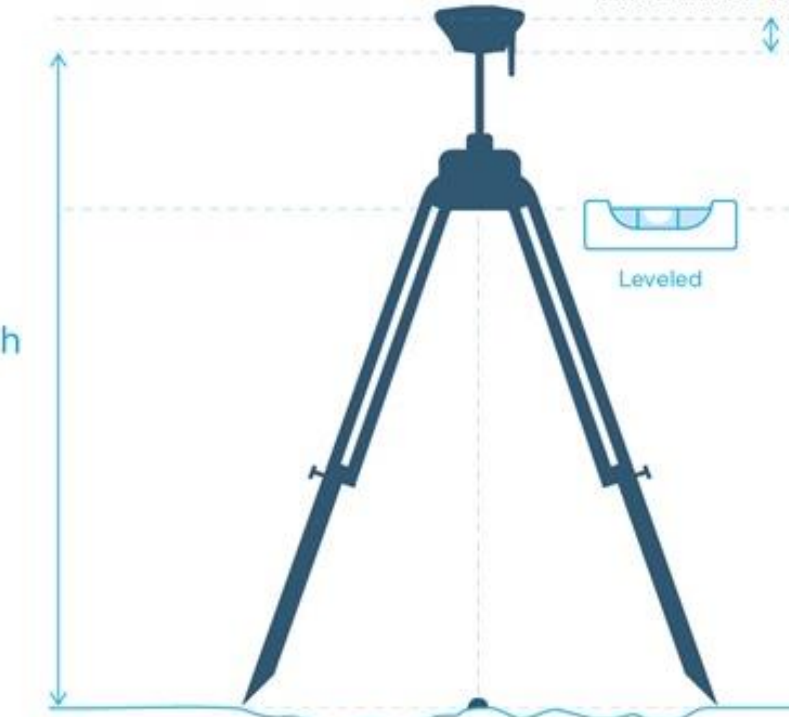
Tribach

To hold the Reach RS to the tripod. Can cost USD 200+ from a survey equipment shop.

ACCESSORIES & TERMINOLOGY

Antenna Reference Point

65mm



Top view: Threaded rod just screwed into drill hole (and glued)



VARIOUS ACCESSORIES FOR ROVER UNIT

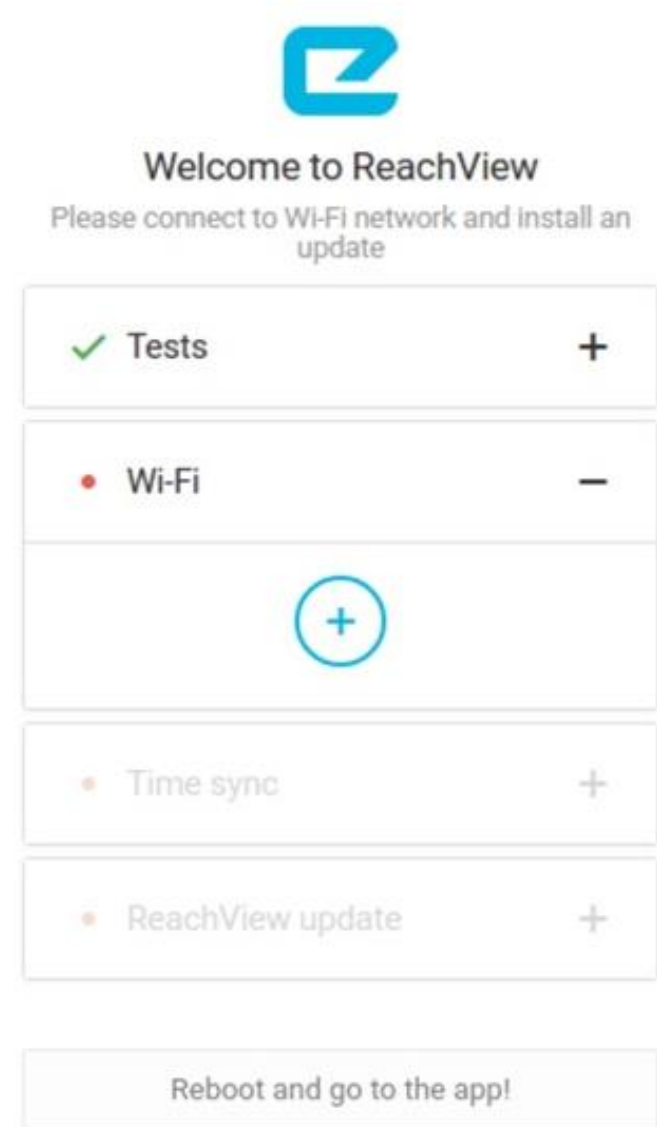


Telescope. More stable if held with a tripod



START WITH LAPTOP

1. Ensure there is only your Wi-Fi operating. If necessary, go to an isolated place. Download fing. It may come in useful later:
<https://www.fing.io/download-free-ip-scanner-desktop-linux-windows-osx/#>
2. Power on your Reach RS Base, assuming you designate your 1st unit as the base. Don't power on the other unit to avoid confusion.
3. Open the laptop network, select the Base hotspot. It appears as reach:xx:xx.
4. Type network password: emlidreach.
5. Open a browser. Type <http://192.168.42.1>, enter. This is the same for all units. You will see a Welcome to ReachView window.
6. Click on the blue circle with + sign to add your Wi-Fi to the Base.



Add new Wi-Fi network



Network name

Enter your Wi-Fi, eg ASUS

Security

WPA2-PSK Default



Password

..... ASUS password



Show password

Tick this box to see the password

Close

Save

If successful, the ReachView window will show that ASUS is Saved (paired with the Base).

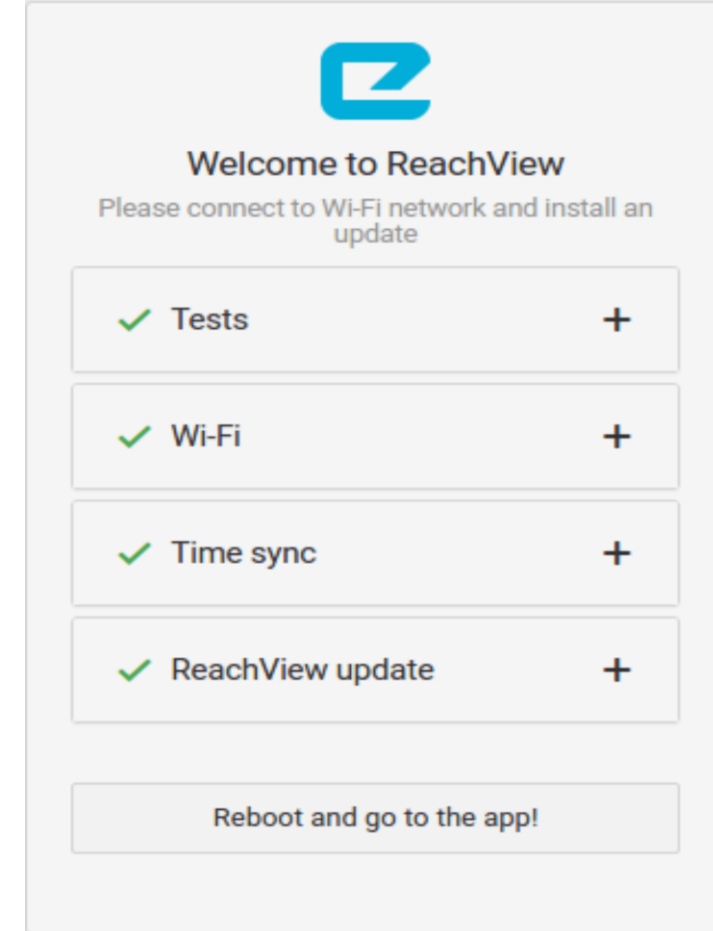
Return to your network, connect the laptop to ASUS.

In the ReachView window, select ASUS, click Connect. During first setup you will see the ReachView Updater. It is a separate app that handles self-testing, time synchronization and updates of the main ReachView app.

Click on it. ReachView updater will check for software updates and will install them.

Press **Reboot and go to the app!** button. Wait while device reboots.

Go to the browser, type reach.local, enter. If successful, you should see a Status window as shown in the next slide.



- reach 192.168.1.23
- Status
- Survey
- RTK settings
- Correction input
- Position output
- Base mode
- Logging
- Wi-Fi/Bluetooth
- GNSS predictor

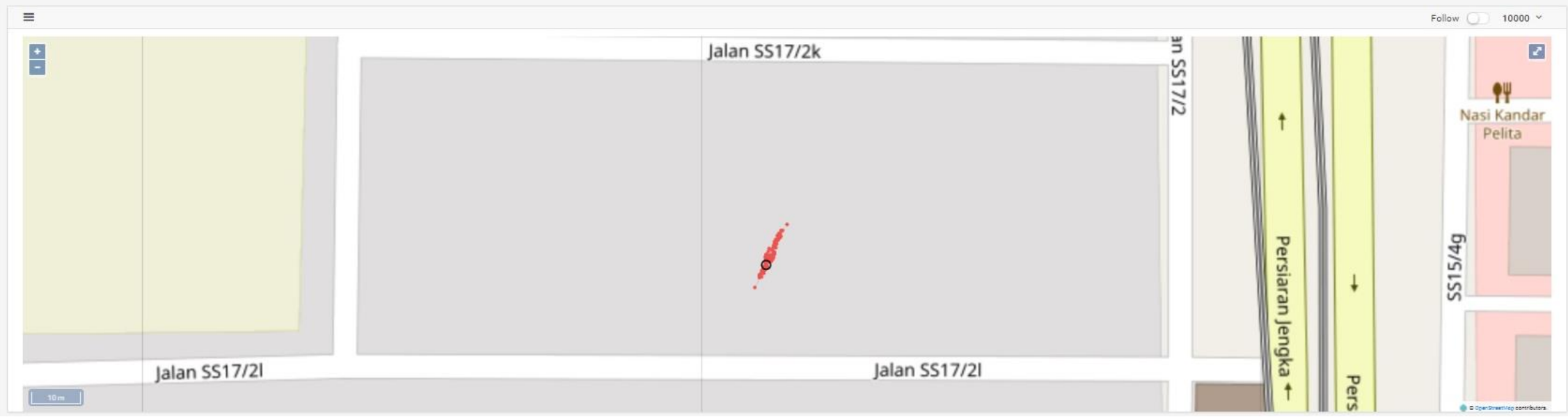
Status



RTK parameters

0.0 s age of differential	0.0 AR validation ratio	0.00 m baseline
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Positioning mode Kinematic	Solution status Single	
Position	LLH	
3.07631618° ± 0.000 m latitude	101.58511515° ± 0.000 m longitude	73.995 m ± 0.000 m height
Velocity		
-0.202 m/s East	-0.485 m/s North	-0.435 m/s Up
Base position	LLH	
0.00000000° latitude	0.00000000° longitude	0.000 m height



REPEAT WITH iPhone

1. Repeat this exercise with the iPhone,
2. In the Settings, open the iPhone hotspot so the Reach RS can access it.
3. From the App Store, download fing.
4. Follow the procedures above for laptop.
5. Best of luck!
6. For more information, refer to <https://docs.emlid.com/reachrs/>

You can read about my travails here:

<https://community.emlid.com/t/getting-started/7732>

Acknowledgement to the following in the forum for their patience & advice: [andrei.kuznetcov](#), [bide](#), [jmcARTHUR](#), [Simon_Allen](#), [TB_RTK](#)