

Installing and Pointing a Tooway Dish yourself, using the Tooway Pointer App.

(Updated 3 Nov 2019, using new style modem and new style tria on mid pole dish)

First of all, download the Tooway Pointer App before you start the installation of your new Tooway system:

Android: https://play.google.com/store/apps/details?id=com.eutelsat.kasatpointer&hl=en_EN

Apple IOS : <https://apps.apple.com/us/app/ka-sat-pointer/id893567688?l=en&ls=1>

Once you've downloaded this app, you won't need an internet connection nor a mobile phone signal in order to use it for installing your dish.

Another useful app to download before you start is an angle finder or clinometer and that will help you get the elevation angle of your dish spot on right from the start. Here's the one that I use on my Android phone:

https://play.google.com/store/apps/details?id=com.plaincode.clinometer&hl=en_EN



You don't need a compass to install this satellite dish as long as you know where south is.

If you're starting from scratch, you'll need to know where the Tooway satellite is located in the sky so that you can choose a place on your property to install it. You will need clear line of sight to the satellite, no tree branches, no buildings, no roof overhangs ... the satellite is located just to the east of due south and the elevation will be between 30 and 40 degrees depending on your location in France.

The Tooway Pointer app has a very useful "Find Satellite" facility built-in which locates the satellite through the camera lens of your phone. You get to this by clicking on Config and then Find Satellite, here are a couple of examples:

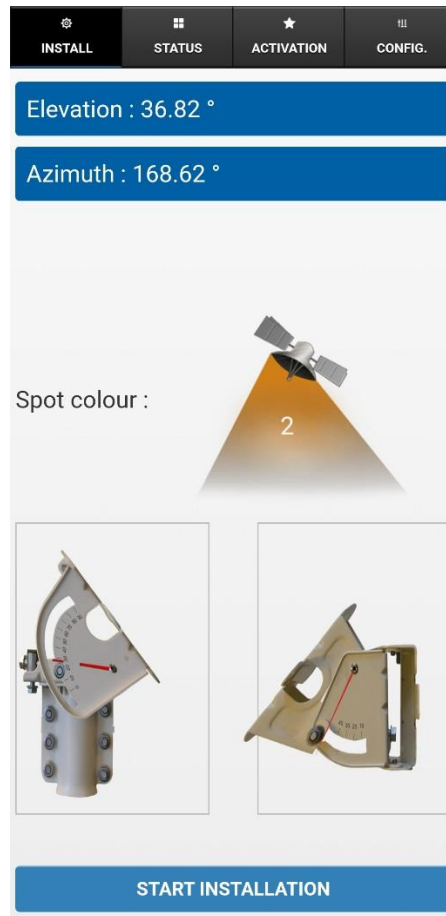
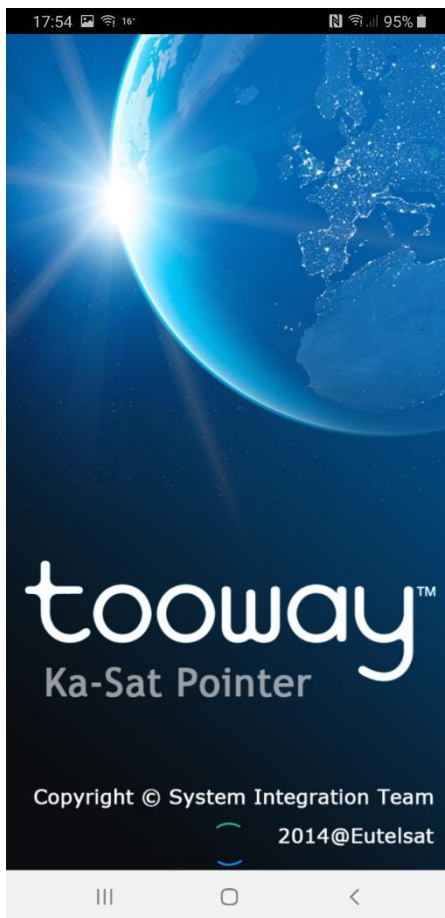


The app produces a green circle when your phone is looking directly at the satellite. The left hand image shows the Tooway satellite just above the roof line with no obstructions but the right hand image shows the satellite lurking behind a tree branch.

Once you are happy that you have clear line of sight, you can proceed with the installation process and that means installing a pole or wall bracket ... most installations use a wall bracket so fix that to your wall first. If you're using a pole in the garden, get that fixed into place and make sure it can't move.

Before you assemble the Tooway dish, it would be useful to know the elevation angle as it's easier to adjust that while the dish is still on the ground. The Pointer App will give you that figure automatically because your phone knows exactly where you are and will calculate the elevation angle for you.

If your Tooway pointing app is already open, then close it down and re-start your phone and then open up the app.



The app will produce the Elevation angle and the Azimuth angle for you, the azimuth is equivalent to a compass bearing but it's the elevation angle that is important at this stage. The angle here is 36.82° so you would adjust the elevation on the dish to the nearest whole degree which would be 37° .



The dish is quite heavy so it's easier to put it up on to the wall mount in three stages so you're actually building the dish bit by bit on the wall bracket. Just follow the assembly instructions that came with the dish.

Eventually, you'll end up with a dish looking like this.



That's the dish assembled (on a pole in this case) and the elevation is already adjusted. The calculated elevation figure will only be accurate if the pole that you are mounting the dish on is perfectly vertical. That's relatively easy on a pole like this but not so easy on a wall bracket especially on old stone properties common in this part of France.



It helps if you can get the pole bit of this wall bracket vertical (washers behind the wall plate, for example) but it's not absolutely essential. If the pole bit was 2 degrees out towards the south, you would adjust the calculated elevation angle by 2 degrees. In other words, treat the calculated elevation angle as a good starting point but be prepared to alter it if your pole is not quite vertical.

If you have the clinometer app installed on your phone, then position the phone on the back of the dish in the position shown below ... adjust the dish elevation bolt until the calculated elevation matches the reading on the phone.



Once your dish is on the pole, tighten the two pole clamps just so that the dish can still be moved by hand but not so loose that it slips down the pole:



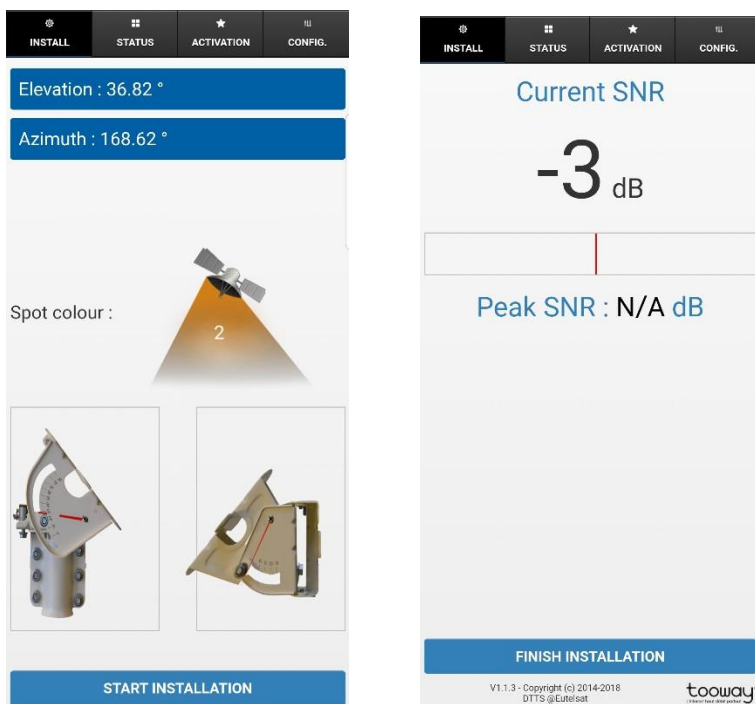
Now connect the satellite cable to the tria and the other end of the cable to the modem inside.



Connect the modem to the mains and you'll see the modem light come on ... it will be solid white to start with and then it will start pulsing. That means the modem is looking for a satellite signal so we now start the dish pointing process.

The pulsing white light also means that the modem is transmitting a wifi signal so you now need to connect your phone to the modem ... the network identity and password of the modem are on a small label underneath the modem. Once connected, your phone might tell you that there is no internet connection and that is normal.

Open up the Tooway pointer app and you'll see the screen on the left, click on Start Installation and you'll see the screen on the right:



The screen on the right means that your phone has turned into a satellite meter measuring the Signal to Noise Ratio (SNR) ... -3 dB means that there is no signal to measure because your dish hasn't found the satellite yet.

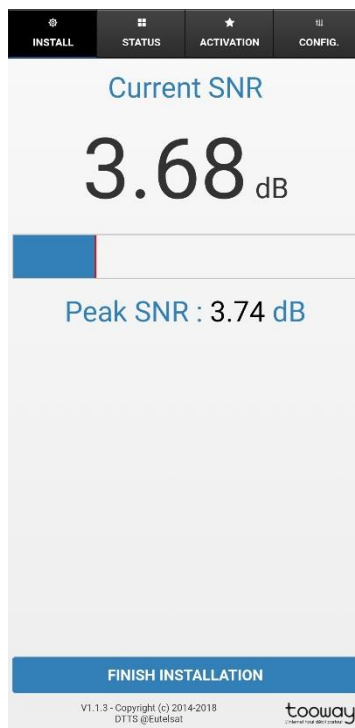
At the same time that you see that screen, the tria on the dish will start to beep and you're ready now to start pointing the dish.

You have already adjusted the elevation to the calculated figure and your dish should be able to move side to side on the pole ... not too loose and not too tight. You need to know roughly where the dish has to point, you don't need a compass but you do need to know where south is. The dish has to point a little bit to the east of due south.

The tria is beeping like a heartbeat ie beep-beep beep-beep beep-beep that means that it hasn't found the satellite signal yet. Slowly start to turn the dish with your hands, you need to be behind or to the side of the dish, not in front.

If the elevation is correct, the satellite signal will be found and the beep-beep on the tria will change and momentarily sound like a telephone ringing. The tria will then start beeping to indicate that it's in fine tuning mode ... beep...beep...beep...beep...beep...

At the same time, the screen on your phone will register a signal, for example:



If your dish doesn't find the satellite straight away, then it usually means that your elevation is not quite right or there is an obstacle in the way. Assuming that nothing is in the way, alter your elevation by half a degree and then do the slow turning of the dish by hand. Keep altering the elevation by half a degree and the dish will eventually find the satellite signal.

Once the dish has found the satellite signal, carefully tighten the four nuts securing the two pole clamps ... you don't want to lose the fine tuning beeps. Once the pole clamps are tight, the dish can no longer move on the pole by hand and you're ready to start the fine tuning.

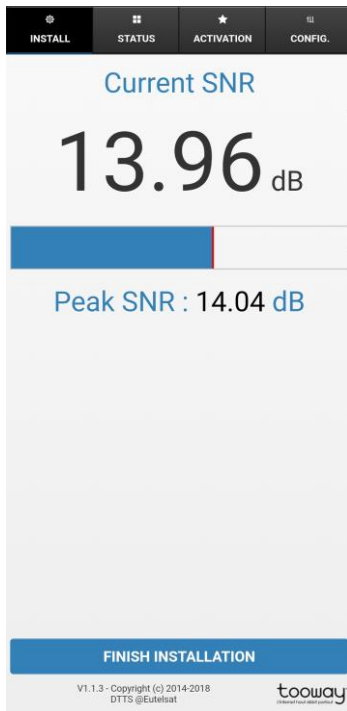
In this case, there's a signal of around 3dB so the coarse tuning has worked and we're now going to fine tune the dish to get that signal into double figures.

So, return to the dish and start turning the fine tuning azimuth bolt ... that will very slowly turn the dish left or right depending if you turn the bolt clockwise or anti-clockwise. As you start turning the fine tuning azimuth bolt (picture below), the signal will either increase or decrease ... keep your eye on the display on your phone. You want to get that reading as high as you possible can.



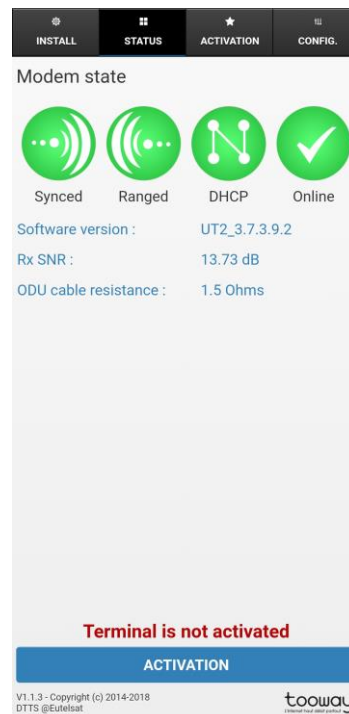
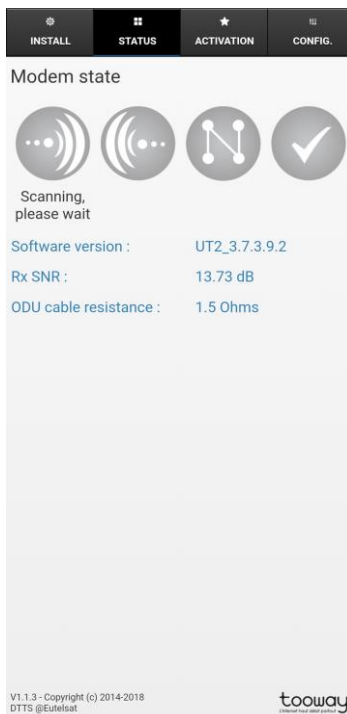
The next step is to fine tune the elevation, so apply your spanner to the elevation bolt ... this is the one that you have already used to set the elevation right at the start. Start turning either clockwise or anti-clockwise and keep your eye on the display on your phone ... you should get that signal reading to at least 11db, even more if you can.

After fine tuning the azimuth and elevation, the display on your phone should look something like this:



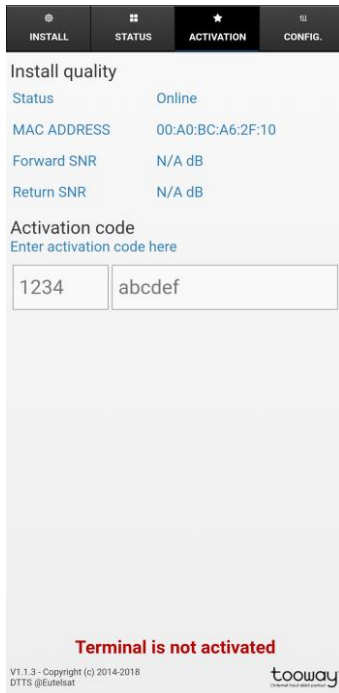
Once you're happy with the signal, carefully tighten the locknuts ... there are 4 in total, left and right for the elevation, top and bottom for the azimuth.

Then, click on FINISH INSTALLATION on the phone and you'll see the modem status screen. Once the icons have turned green, your modem is ready for activation.



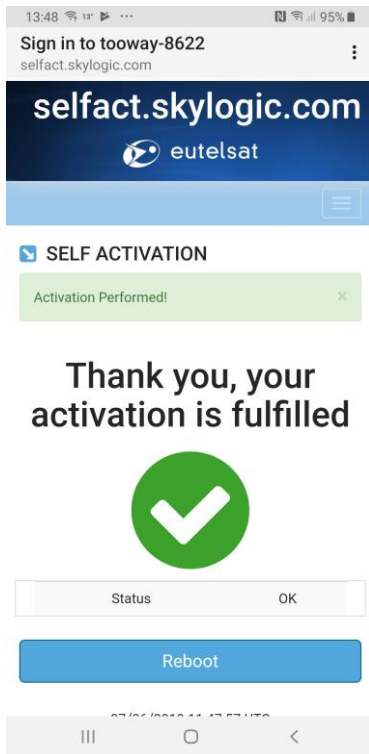
At this stage, the light on the modem will have turned a solid blue.

Click on the Activation button on the screen ... the app will detect if a software update is necessary (it usually is) and will give you a message that an update is in progress. It's important not to switch off your modem while this is happening ... the light on the modem will change several times and, after about 15 minutes or so, will turn back to solid blue. This means that the modem has finished the update and can now be activated.



Your phone should now look like the image above, it can sometimes take a little while to catch up with the modem so, as long as the light on the modem is solid blue, you can restart your phone and open up the Tooway app and click on ACTIVATION.

Enter your activation code into the two boxes, it's usually 5 digits in the left hand box and the rest in the right hand box.



Once you see this page, your modem has successfully activated and it will now reboot ... the next time you have the solid blue light on the modem, you'll be on-line.