

S100 LoRa Radio Quick Guide



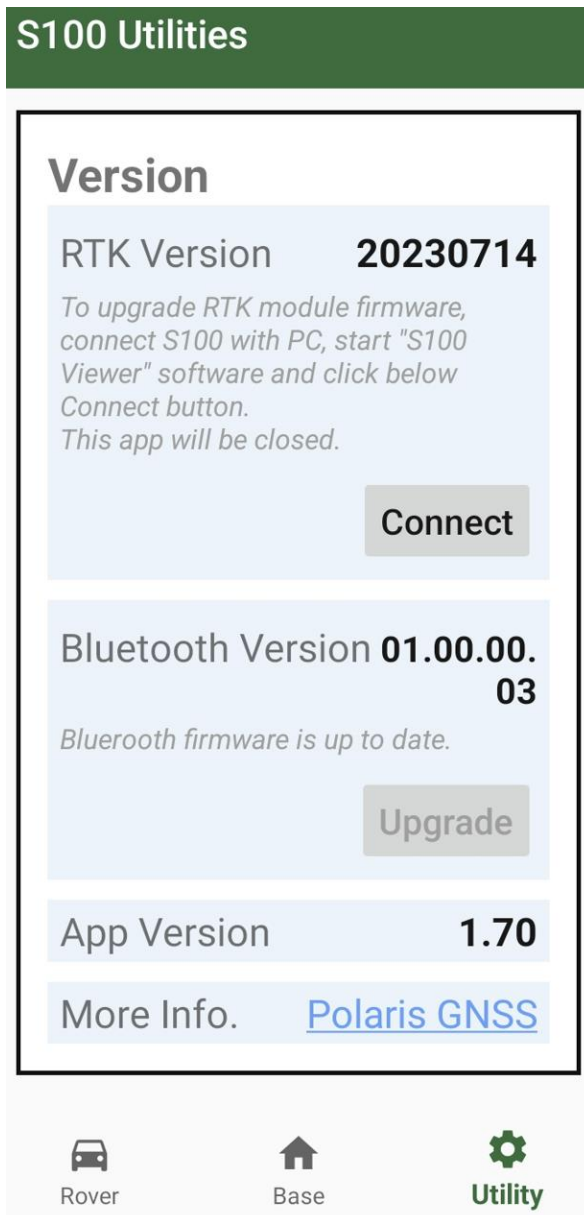
For using S100 Lora Radio with FieldGenius for Android, please see https://www.polaris-gnss.com/S100_Radio_with_FGA_Quick_Guide.pdf

For using S100 Lora Radio with Alpha+, please see https://www.polaris-gnss.com/Lora_Radio_with_Alpha_Quick_Guide.pdf

S100 Lora Radio Requirement

- Polaris Connect App version 1.70 or later
- S100 RTK firmware version 20230714 or later

See S100 User Guide section 6-2 to update S100 RTK firmware
https://www.polaris-gnss.com/S100_RTK_Receiver_User_Guide.pdf



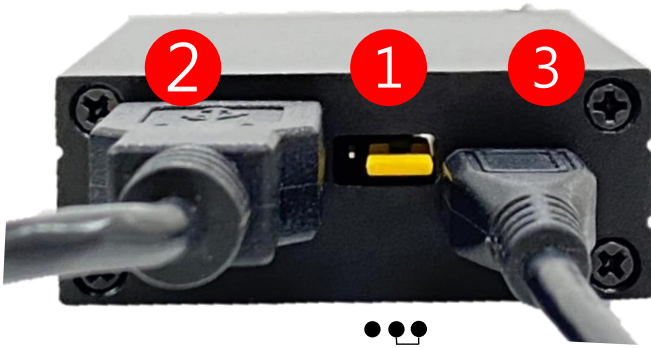
S100 Radio Interface Overview

1. Connect to S100 RTK Receiver
2. Radio Mode Select
3. Connect to Power Bank (5V Power Input) / Radio Configuration Port
4. Base Mode / Rover Mode Select
5. SMA Connector for Radio Antenna



S100 Radio Hook Up

1. Jumper to Transceiver Mode (Connect Right 2 Pins)
2. Connect to S100 RTK Receiver
3. Connect to Power Bank
4. Connect to Radio Antenna



S100 Radio Hook Up

4. Connect to Radio Antenna
5. Select Base Mode or Rover Mode



Jumper to **Base** Transmission Mode
(Connect Right 2 Pins)



Jumper to **Rover** Received Mode
(Connect Left 2 Pins)

Polaris Connect App Setup

Base Radio Setup

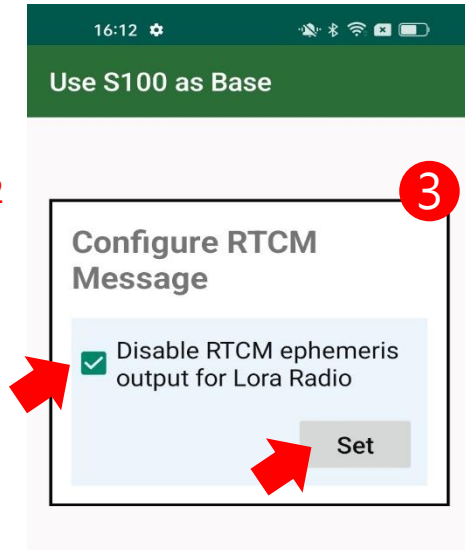
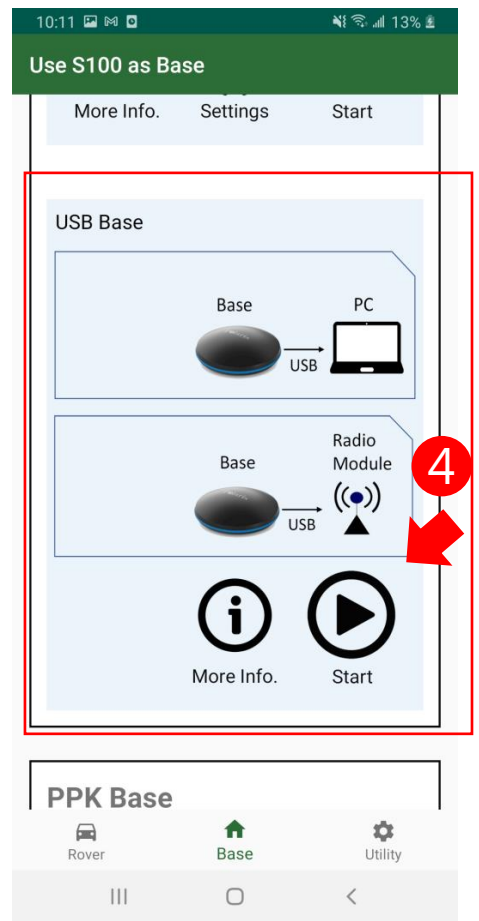
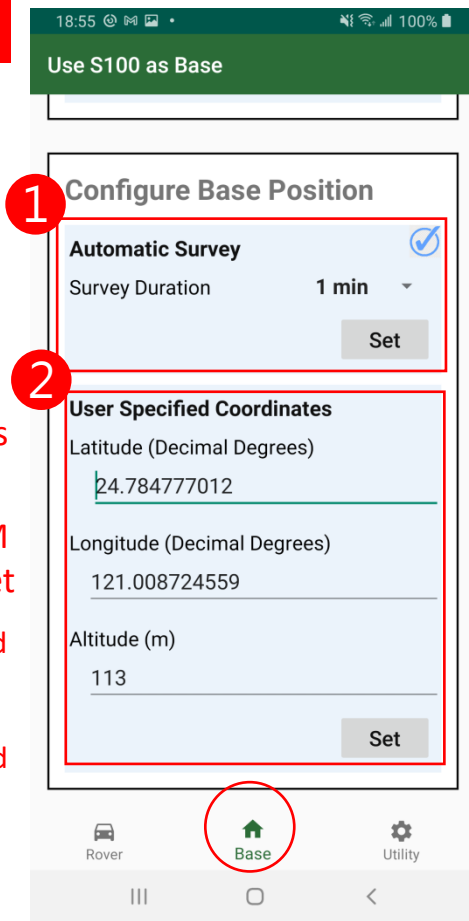
Setup Base Position:
Go Base page,

- 1 Set Position by survey duration
- 2 Or Set Position by entering coordinates manually
- 3 Select Disable RTCM Ephemeris, Press Set

Ephemeris can be disabled in an RTK application, to reduce data throughputs. But PPK application should be enable.

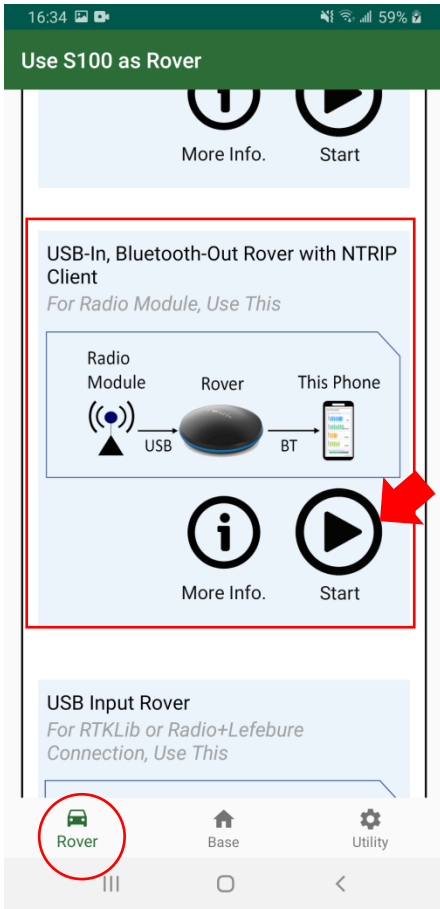
- 4 Press Start, start to broadcast

If want to log base RTCM data for PPP processing, do page-12 procedures before above #4 Press Start.



Polaris Connect App Setup

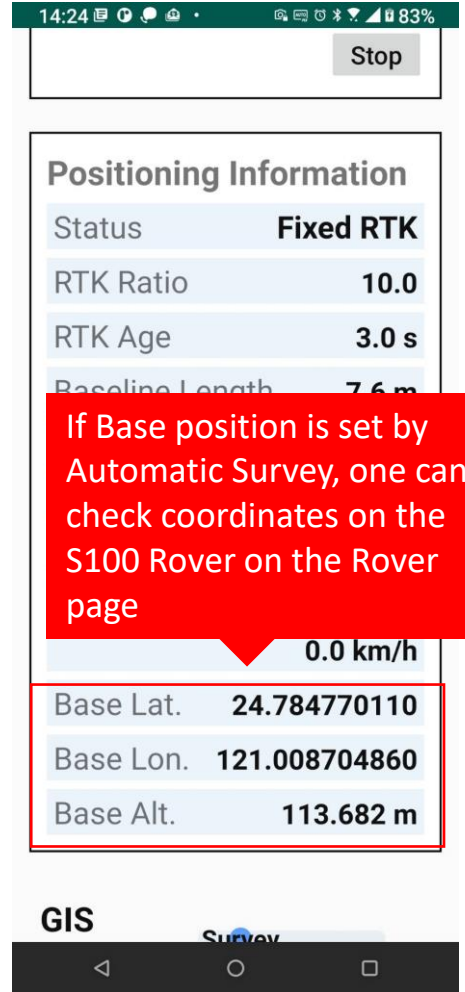
Rover Radio Setup



After Polaris Connect App has been setup for both base radio and rover radio, the S100 rover will be able to receive S100 base data transmitted over radio.

Polaris Connect App will exist after setting up the Base Radio.

Polaris Connect App stays after setting up the Rover Radio. One can keep Polaris Connect App running in background and use 3rd party GIS App.



Radio Configuration (**Advanced, No Need & Not to Do This on First Time Use !!!**)

The shipped base radio and rover radio pair is plug-and-play, no need for any radio configuration.

This **Advanced** radio configuration information is provided only for situation such as if another user has a pair of radio operating nearby causing interference, and needing to change to a different radio channel (net ID) from default.



Connect to Windows PC

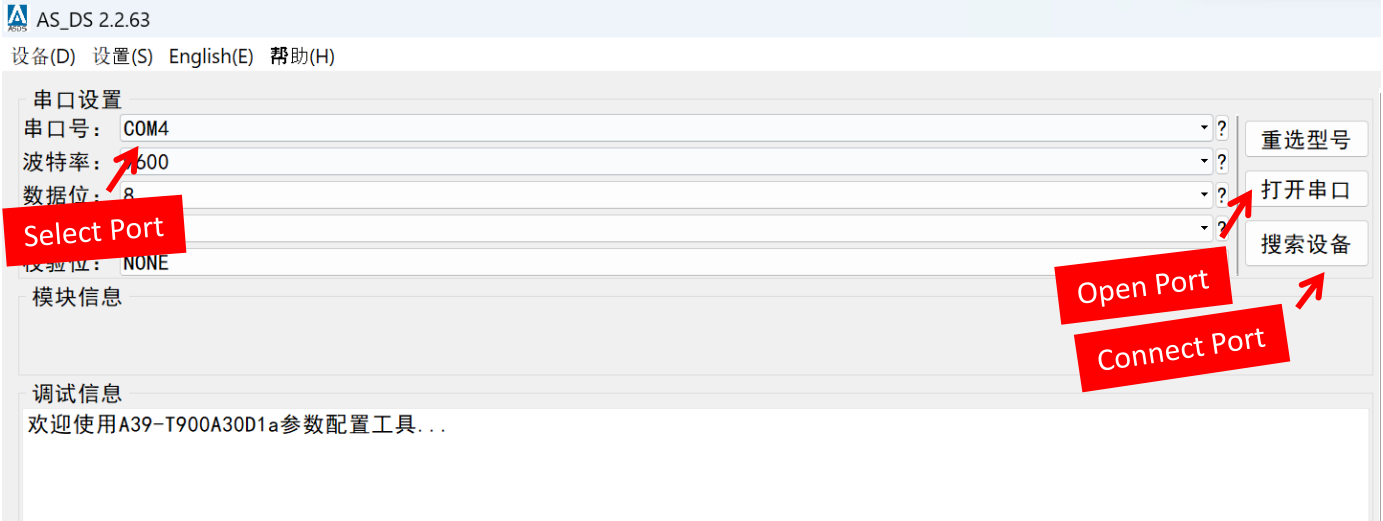
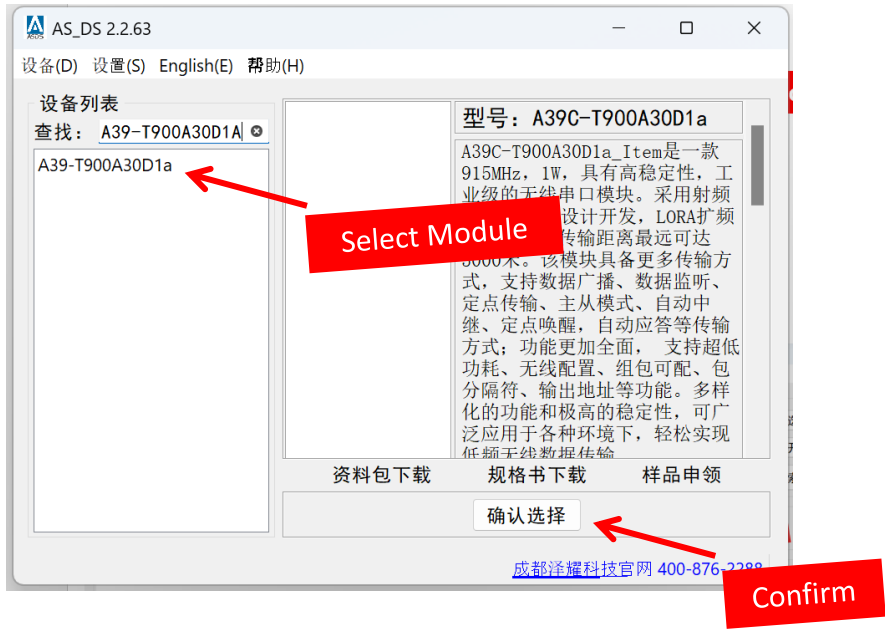
1. Jumper to Radio Configuration Mode (Connect Left 2 Pins)
2. Connect to Windows PC
3. Go to Radio Configuration Tool (see next page)

Radio Configuration (Advanced, No Need & Not to Do This on First Time Use !!!)

Download Link:

http://www.ashining.com.cn/relatedsoftware/soft_asds.zip

Connect Radio to Windows PC then Open the Configuration Tool:



Radio Configuration

模块参数配置

波特率: 115200

数据位: 8

停止位: 1

校验位: NONE

空中速率: 9.6K

发射功率: 21dBm

工作模式: 透明传输

通信信道: 41 HEX

本地组号: 0 HEX

本地地址: 0 HEX

打包长度: 40 HEX

休眠时间: 0 HEX

选项

主从-主机

输出地址

主从-从机

可靠传输

输出分隔符

串口回复配置结果

发送唤醒码

读取参数 恢复出厂 写入配置 更多设置

Set baud rate to 115200

Increase dBm for Base Radio
For longer range
Default 21dBm

Set to transparent mode

Change channel ID if needed

Write Setting

Multiple Rover Application

In this case, **Only** needs **One Base** to broadcast RTCM data, sending RTCM data to **One** or **More** Rover.

1. Setup all S100 LoRa Radio with **same channel ID** (see page-6,7,8)
2. Setup Base (see page-3 & 4 & 5)
3. Setup Rover (see page-3 & 4 & 5)

1 Base Radio

2 Rover Radio

Base



Rover



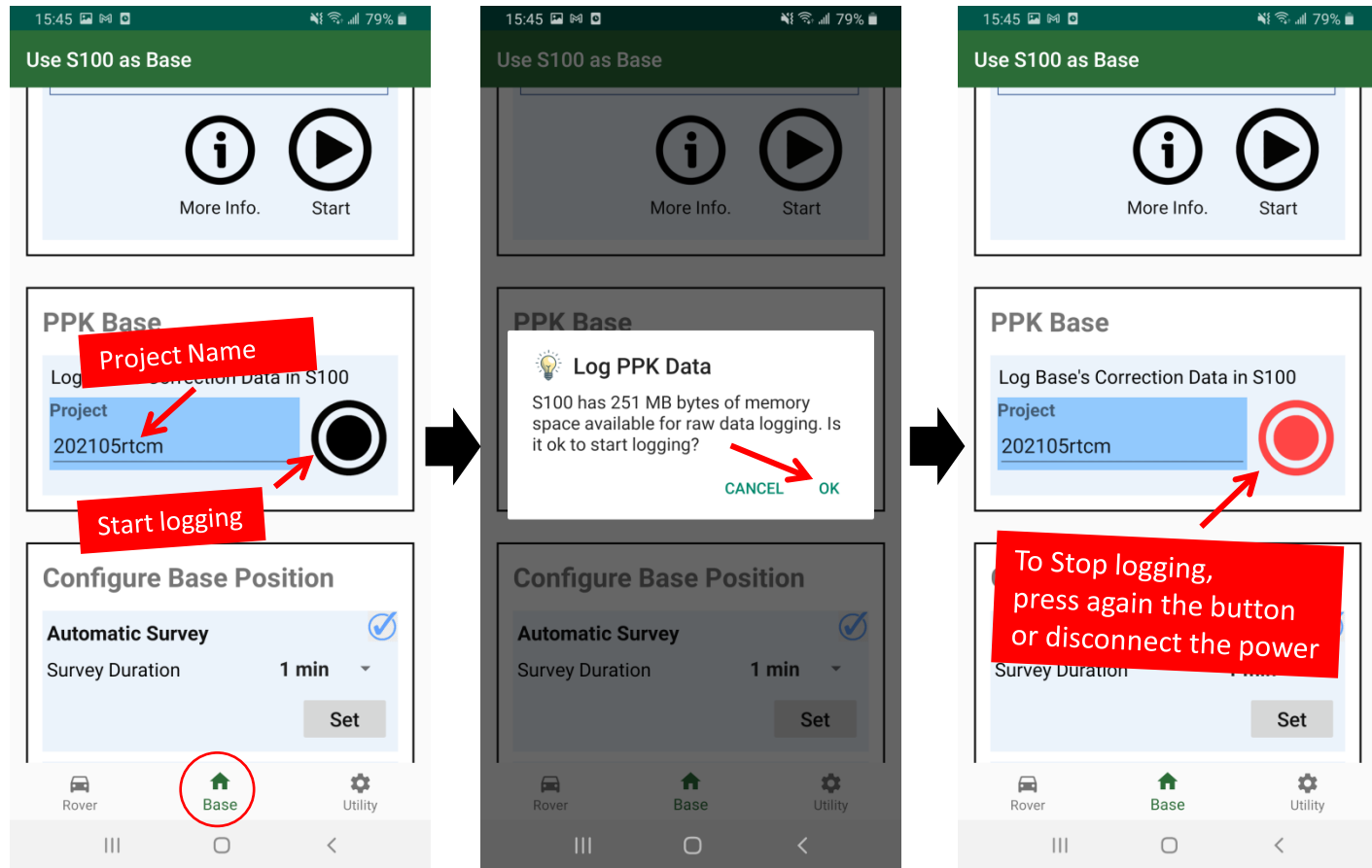
Rover



Rover

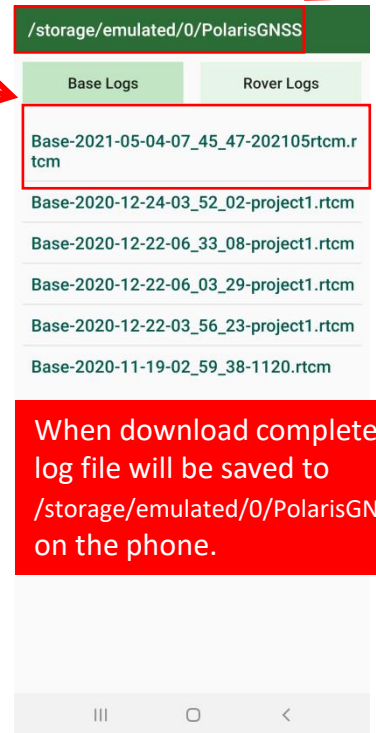
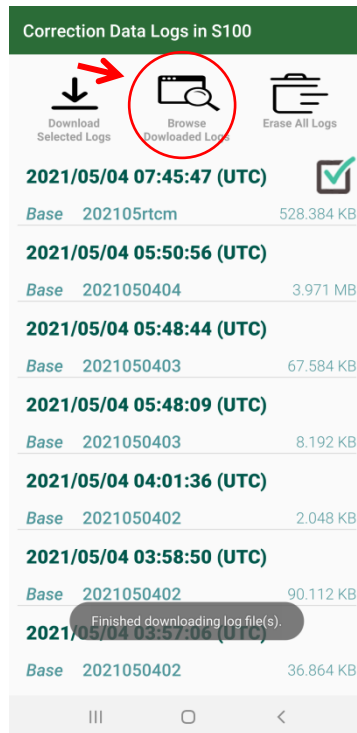
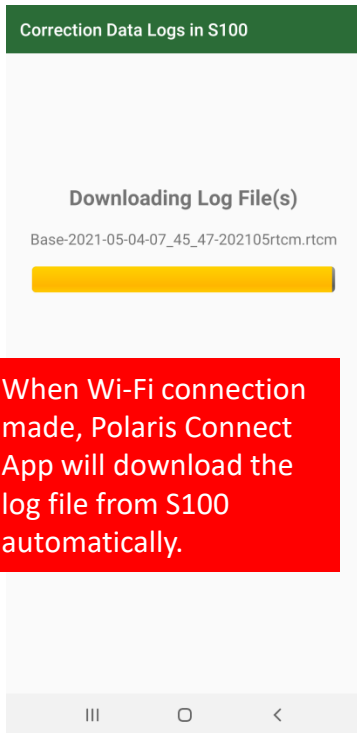
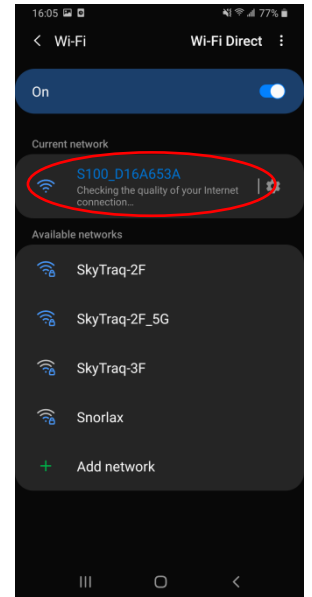
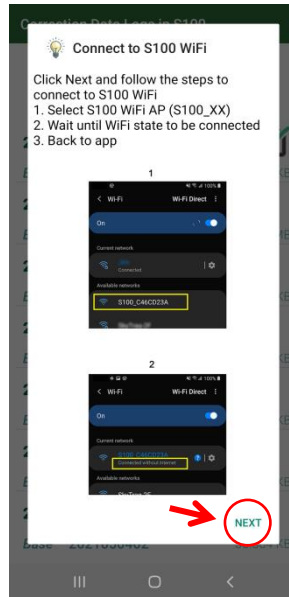
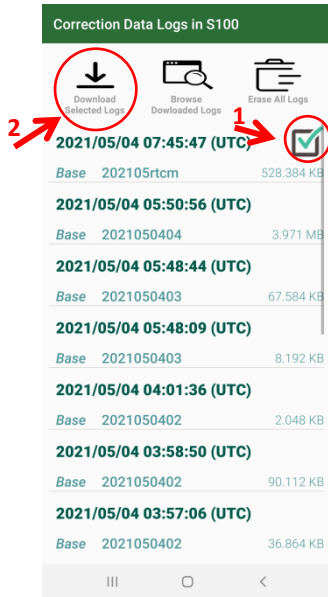
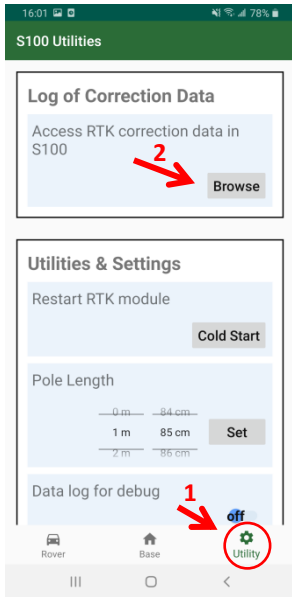


Logging Base RTCM Data



To Download file, see page-13.

Download RTCM Data



Usage Notice

- When detaching USB cable from the radio, please pull the USB cable connector horizontally, avoid bending/tilting upward at the same time.