NR3
Quick Start
Guide
Ver 1.02

1   Shipping Case Contents

The Carlson NR3 system is shipped with the following items:

Figure 1: Shipping Case Contents

Shipping Contents

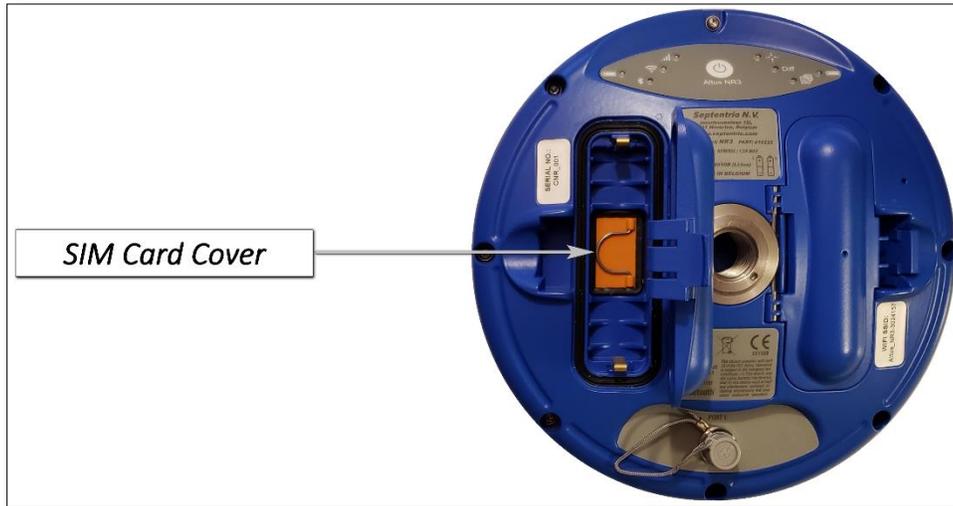| Item	Main Kits	Part Number	Quantity
1	Carlson Software NR3 Receiver	410222B1775	1
2	USB Cable	214100	1
3	Internal Batteries	215344	4
4	Battery Charger	215501	1
5	DB9 Serial RS232 Male Connector (optional, not pictured)	214995	1
6	DB9 Serial RS232 Female Connector and open-ended power connector (supply range 9 – 30 VDC) (optional, not pictured)	214969	1
7	Bluetooth to Bluetooth dongle for iOS (optional, not pictured)	215258	1
8	AC Wall Adapter (EU / UK / AU / US) (optional, not pictured)	EU: 214879 UK: 214871 AU: 214872 US: 214873	1

2   SD / SIM Card Slots

Figure 2: SIM Card Cover Location

The Micro SD SIM card is located behind the left battery door. To access, compress the battery door latch an open. Lift the SIM card cover up to remove. Slide the SIM (micro) with the contact facing away from the battery and toward the GNSS antenna of the unit into the slot (shown below). The SIM card is fully inserted with an audible 'click' sound. Replace the SIM card cover.
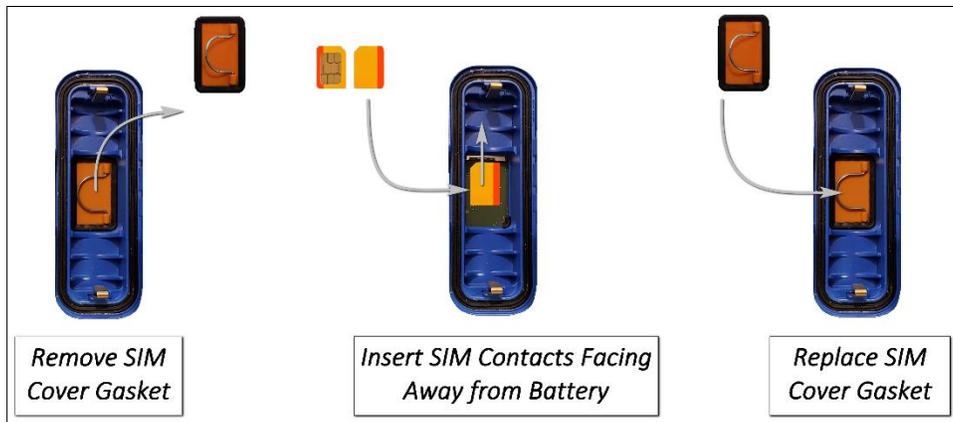

Figure 3: SIM and SD Card Slot Locations

To remove the SIM card, push the SIM card further into the slot, listen for the 'click' sound and allow the SIM to spring free.

3   Install Battery

The NR3 allows two batteries to be installed. When installing the batteries, ensure the correct orientation with the positive end towards the front of the device.

Access the battery bay by compressing the battery latch towards the inside of the device and pull up. This will swing the battery latch open.

Place the batteries into the designated spot and close the battery cover until the battery latch clicks into place.

Figure 4: Battery Installation

To remove the battery, compress the battery latch towards the inside of the device and pull up. The battery can now be removed from the battery compartment.

4 Powering On / Off

To power on the receiver, press the 'Power' button for 1 second. The receiver will power up. To power off the receiver, press the 'Power' button for >2 seconds.

5 On-Board Web UI

To view the NR3 Web UI, a connection needs to be made the NR3's Wi-Fi network. In a phone, tablet, PC, or any other Wi-Fi capable device, search for the NR3 Wi-Fi network and connect. The name of the NR3 Wi-Fi network will be the serial number of the device: Shown below using Windows 10.
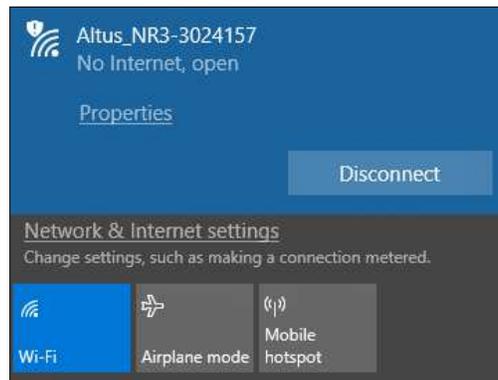

Figure 5: Connection made to NR3 Wi-Fi Network

The Web UI is located via browser at **192.168.20.1** and the login details are not needed. Once connected to the NR3's Wi-Fi, open a browser window and type the address into the address bar.

Figure 6: 192.168.20.1 Entered in Web Browser

Once the web address is loaded, the Overview tab of the Web UI will be presented.

6 Bluetooth

To connect to the NR3 Via Bluetooth, use pairing code **1234**.

7 GNSS Rover Configuration – NTRIP

7.1 Enable the Cellular Modem

Open the web interface by connecting to the NR3's Wi-Fi network and navigating a browser window to 192.168.20.1. The landing page will be on the 'Overview' tab, scroll down to the Cellular box and enable the cell modem using the toggle switch (highlighted below).

Figure 7: Enable the Cell Modem

7.2 Connect Cell to APN

Click on the Communications tab and select 'Cellular' from the drop-down menu. Enter in the SIM PIN (if applicable). In the Cellular Configuration box, ensure the power is set to 'on', connect is set to 'on', and the Access point name with Username and Password (if applicable) is entered. When complete, click the 'Ok' button to save to current settings.
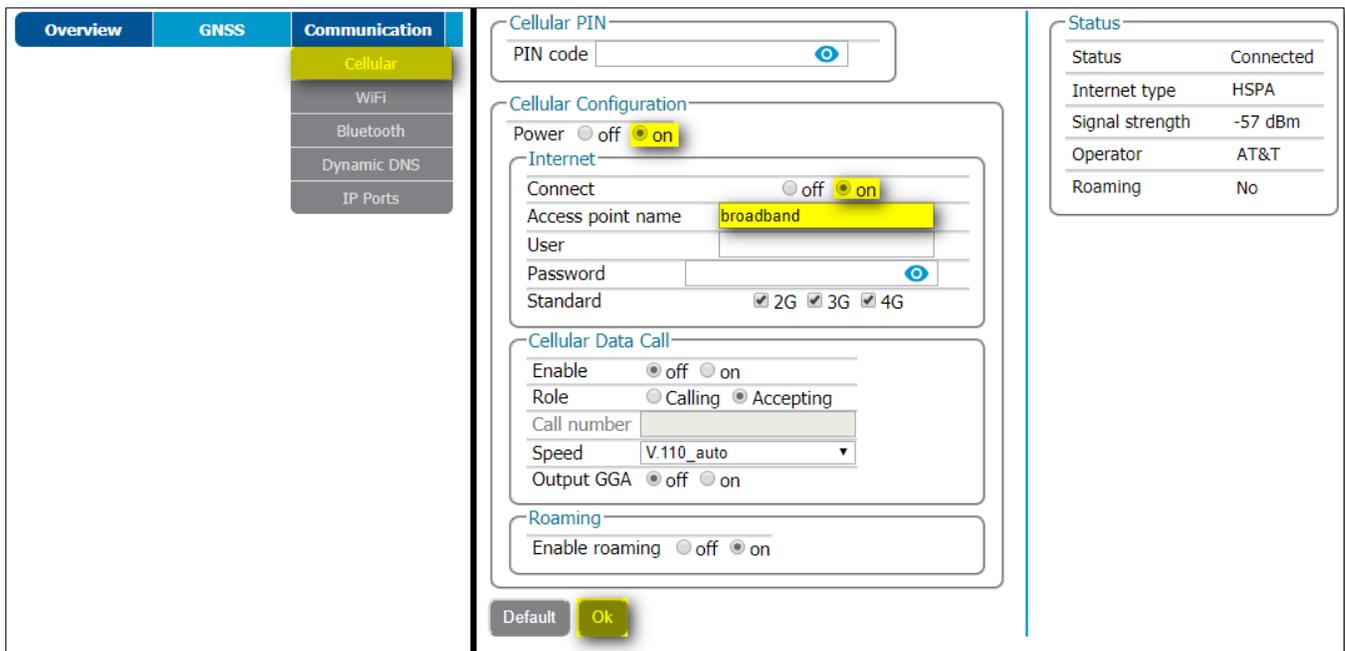

Figure 8: Cell Configuration

Once a valid connection is made, the line between the NR3 and the internet will light up green.

7.3   GNSS Position Mode

The next step is to set the NR3 as a rover. Click on the GNSS tab and select 'Position Mode'. Configure the NR3 as a rover by selecting 'Rover'. Click 'Ok' to save the current settings.
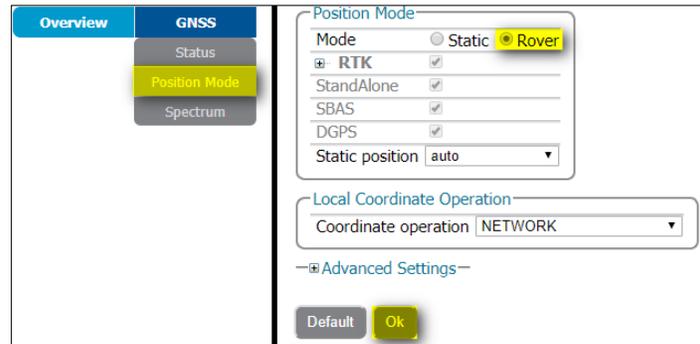

Figure 9: GNSS Position Mode – Rover

7.4   Corrections – NTRIP Client/Server

The NR3 will need to have an RTK correction stream configured for input. Click on the Corrections tab and select 'NTRIP Client/Server' to begin.

- In the NTRIP Settings box, click on 'New NTRIP client'.
- In the Edit NTRIP Connection box, set the Mode as 'Client', set the Caster and Port values along with Username and Password. Select the Mountpoint from the drop-down menu. When all settings are complete, click 'Ok'.
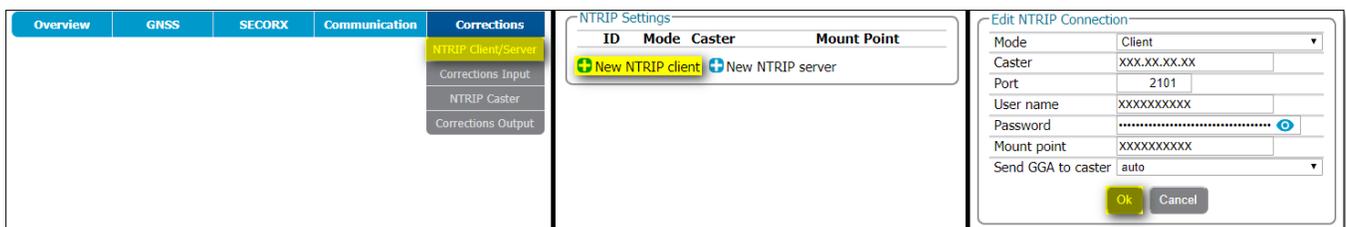

Figure 10: GNSS NTRIP Connection Client Settings

Click 'Ok' when all settings are complete to save to current settings. The rover will begin to receive corrections when in a valid location. The Ntrip box will show a green line indicating a valid correction stream.

8   NR3 Front Panel

Figure 11: Carlson NR3 Front Panel

LED	ICON	Description
Battery Power (Left / Right)		Blinking: Battery not in use On and solid: Battery in use
Bluetooth		Off: Bluetooth not in use Blinking: Bluetooth is discoverable On and solid: Bluetooth link is active
Wi-Fi		Off: Wi-Fi Access Point Inactive On and Solid: Wi-Fi Access Point Active
Cellular Modem		Off: Cellular Modem not in use On and Connecting: Orange and solid On and Connected: Green and solid On with Connection Error: Red and solid
Receiver Mode		Green and solid: Fixed RTK Red and solid: Autonomous (SA) Orange and solid: Other Modes Off: No Position
Differential Corrections	Diff	On and solid: Differential Corrections Received Off: Differential Corrections no Received
Data Logging		Off: Logging disabled On: Logging enabled

9   Power Button Functions

The NR3 Power Button has several functions.
- Power the device On / Off
- Enable / Disable Data Logging
- Enable / Disable Wi-Fi Status
- Reset to Factory Default

Each of these functions can be selected using the following table:

Current Power Status	Action	Resultant Power Status
NR3 is Off	Press Once	**Press Once** Device will Power On (~20 seconds)
NR3 is On	Press Twice	**Press Twice** Wi-Fi will Toggle On / Off (LED indicated)
	Press Once	**Press Once** Data Logging will Toggle On / Off (LED Indicated) *Note: Data Logging can only toggle on if messages have been previously selected.*
	Press and Hold	**Press and Hold for 2 Seconds** Device will Power Off

Figure 12: NR3 Power Button Functions

If you have a question, please contact Carson Technical Support.

Carlson Technical Support:
- Email: Support@CarlsonSW.com
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