Using iG8 with ESRI® Collector on Android

Date: 5 May 2021, Rev 4

By: Mark Silver, ms@igage.com, +1-801-412-0011 x16

Thesis

Using an iG8 with ESRI® Collector is easy to setup. Once setup, for future use you just turn on the receiver, then start Collector.

Prerequisites

iG8, Internal GSM Sim Card or UHF Correction Source, Collector running on Android (iOS is not compatible because of Bluetooth issues.)

Initial Setup

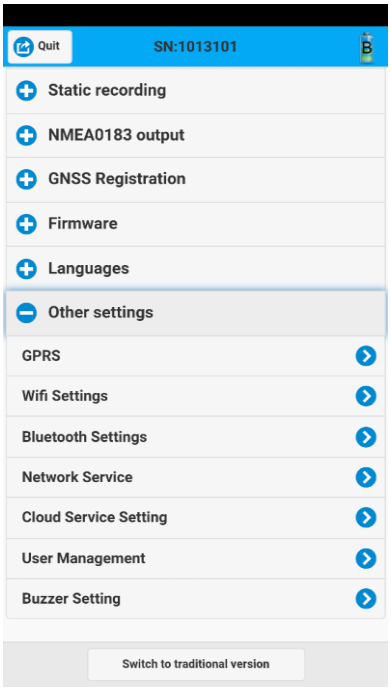
There are a few settings on the iG8 to establish a network connection automatically when you turn on the receiver. The following settings only need to be done once. These screen shots are from Chrome on an Android phone, but you can also set it up on a PC.

To connect by Wi-Fi, the SSID is 'GNSS-xxxxxxx' where xxxxxxx is the device serial number.

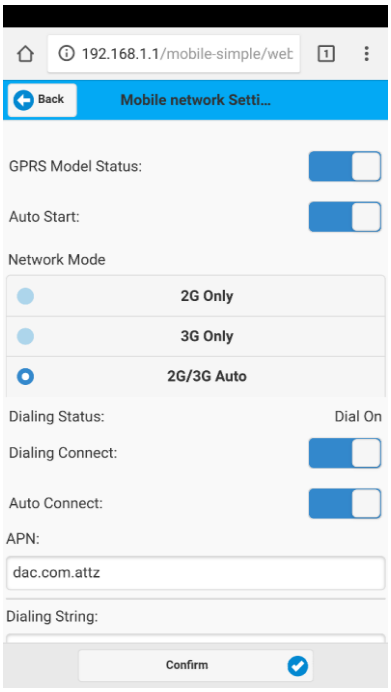
The Wi-Fi passcode is '12345678'. Browse to the address '192.168.1.1' and login using User Name: admin and Password: password.

Additional connection details for Wi-Fi are in the iG8 User Manual.

The main mobile screen will be shown:



Click on GPRS:

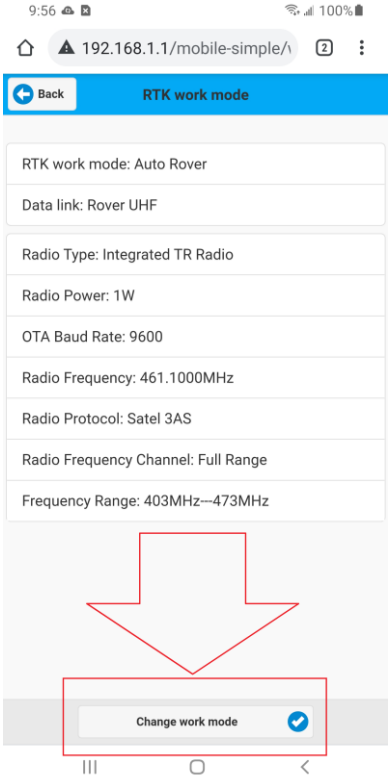


Set to auto dial, auto connect, with correct APN. Values above are for the cards we include with the device.

APN:	dac.com.attz	(use Broadband for ATT)
Dialing String:	*99#	
User Name and Password:	(blank)	

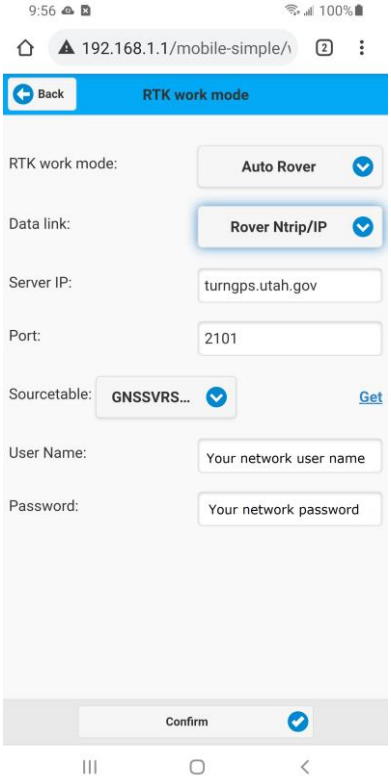
Click Confirm, then return to the main menu.

Clickn on '+ RTK work mode', then 'RTK work mode >':



Click on 'Change work mode' at the screen bottom.

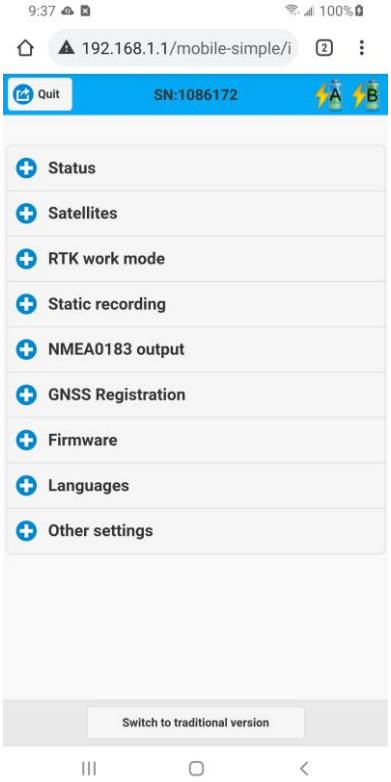
The Work mode configuration dialog is shown:



Set the work mode to ‘Auto Rover’, the Data Link to ‘Rover Ntrip/IP’, enter the correct server and port. Click the ‘Get’ button to load the mount table from the server, then select the correct mount point (typically a GNSS VRS mount point). Enter your user name and password.

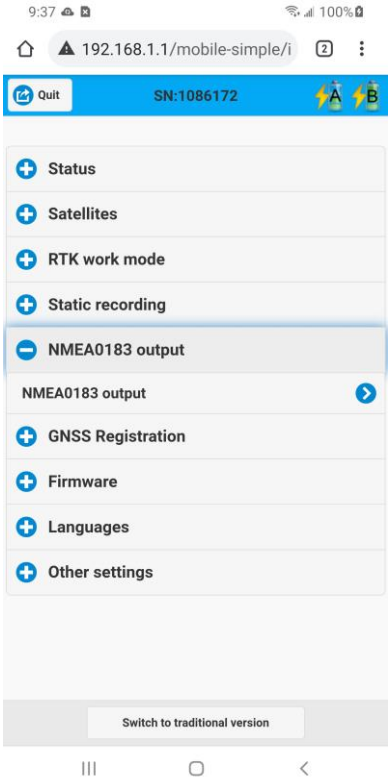
Click confirm.

Next configure NMEA output. From the main menu:

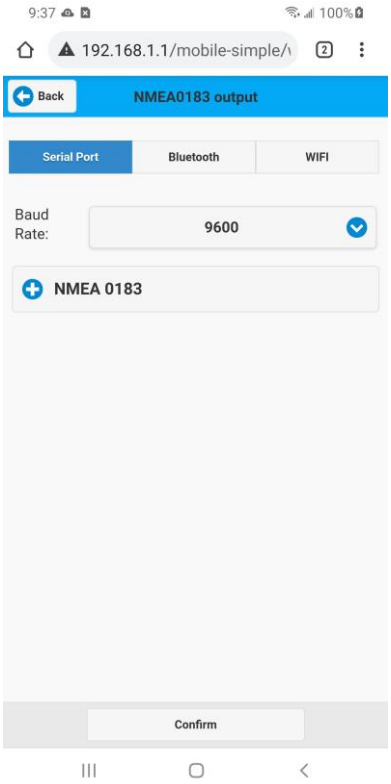


Click on the ‘+’ to left of ‘NMEA0183 output’.

The item will open:



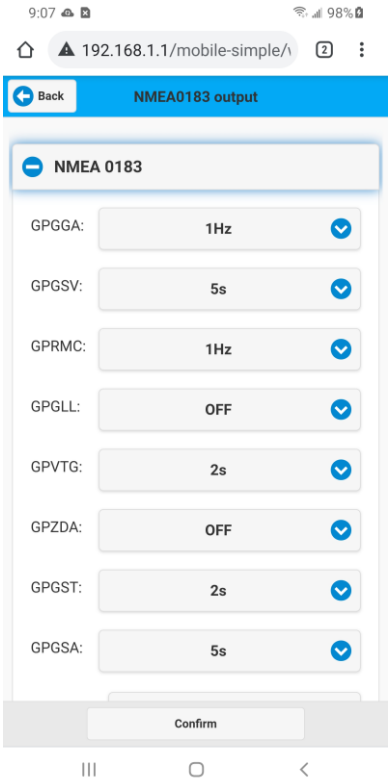
Click on the '>' arrow to right. The NMEA0183 output dialog is shown:



Select the 'Bluetooth' tab.

Click on the '+ NEMA 0183' to open the NMEA configuration screen.

The NMEA0183 configuration screen is shown:



Collector understands the following NMEA sentences:

GGA, GSA, GSV, RMC, VTG, GST

(see https://doc.arcgis.com/en/collector-classic/ios/create-maps/gps-receiver-support.htm)

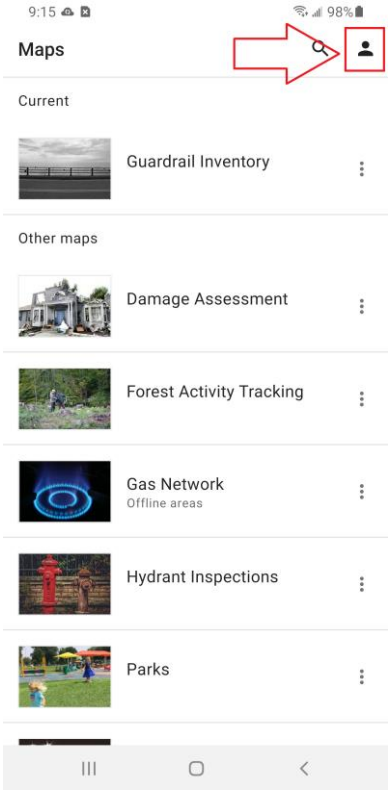
Some of the sentences are redundant, DOP and SV information is not needed every second. The sentences, in the order that they appear on the device setup with short descriptions and our recommended intervals:

GPGGA	1 Hz	Time, position, and fix related data
GPGSV	5 s	Number of SVs in view, PRN, elevation, azimuth, and SNR
GPRMC	1 Hz	Position, Velocity, and Time
GPVTG	2 s	Actual track made good and speed over ground
GPGST	2 s	Position error statistics
GPGSA	5 s	GPS DOP and active satellites

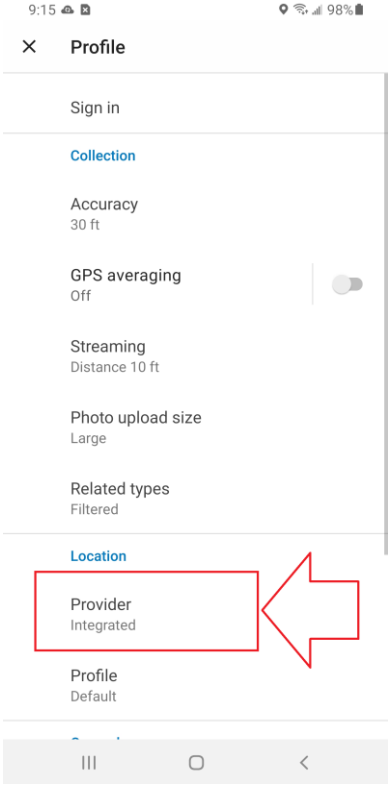
Set appropriate rates, then click on Confirm and the receiver will begin to transmit position, velocity and tracking information to any Bluetooth connected device. These settings changes will survive a power cycle and remain in effect until disabled.

Configuring Collector

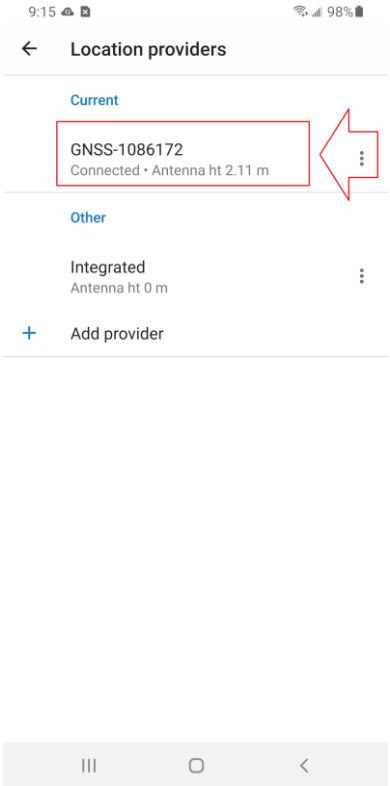
Start Collector, click on the Profile icon (upper-right-corner):



The Profile dialog is shown:



Click on 'Provider':



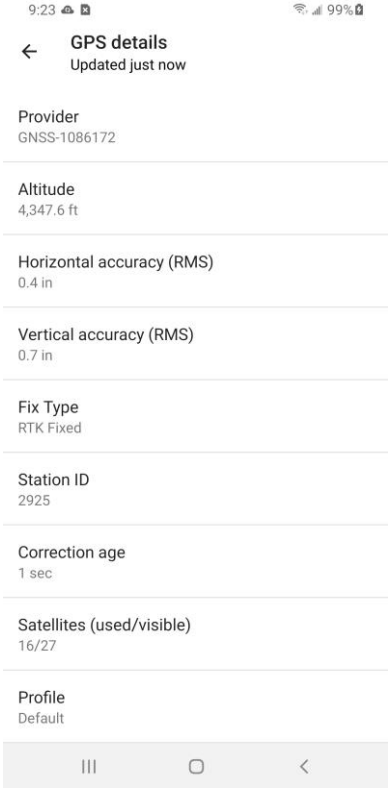
Select the receiver, set the antenna height to the pole height plus the L1 Phase Offset:

2 meter pole + 0.114 offset 2.11 m

Return to the main Collector menu and select a project:

Your current position should be shown on the map with a small blue arrow.

Click on the ‘GPS accuracy’ bar to view additional GPS detail metadata:



Once configured, you can turn on the head.

The receiver will automatically:

- wait for a valid position
- connect to the selected cellular network
- connect to the selected RTK network source (NTRIP or DIP)
- begin receiving RTK corrections

Once the right-hand LED on the iG8 is blinking once per second the head is ready to go (this takes about 30 to 60 seconds.)

If the right-hand LED is blinking:

Amber	Float
Green	Fixed

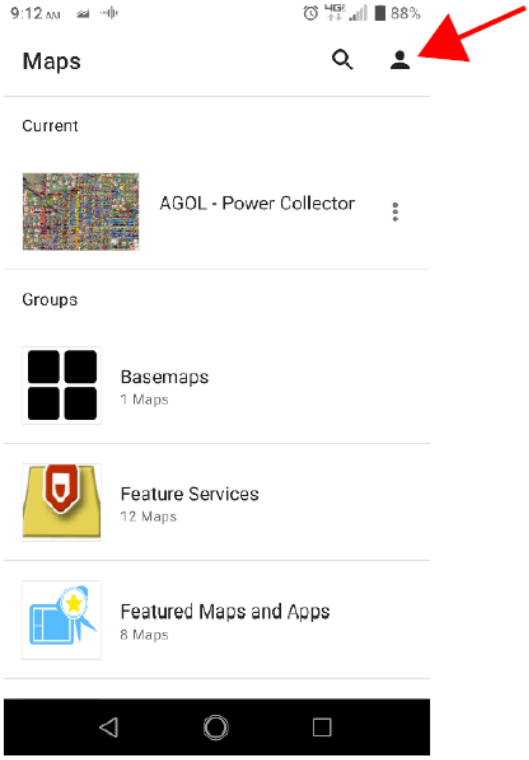
Once corrections are being received, you can start Collector on your Android device. Collector will automatically uses the last device, Bluetooth is automatically bonded and setup and data collection can begin.

Framing Considerations

Typically, network connections in the USA are framed to NAD83 2011 (2010.0 EPOCH). This is the reference frame that you want your collected and staked data to appear in.

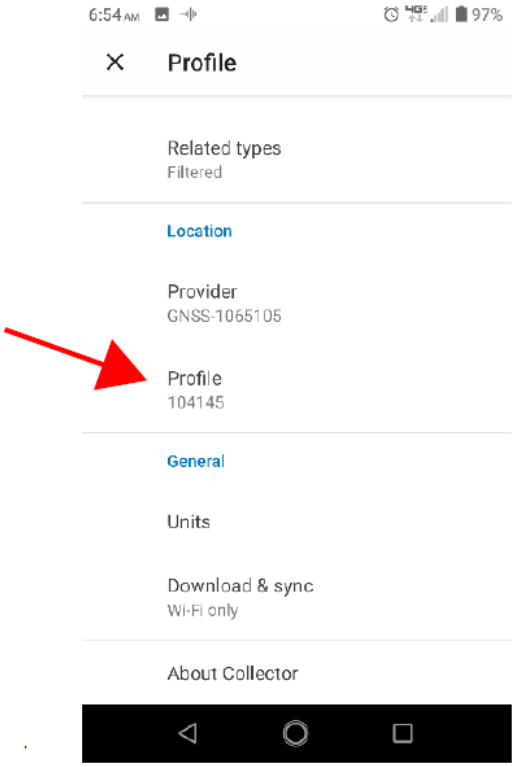
You may need to set your profile to match the collected data profile.

Open Collector, from the main Maps menu:

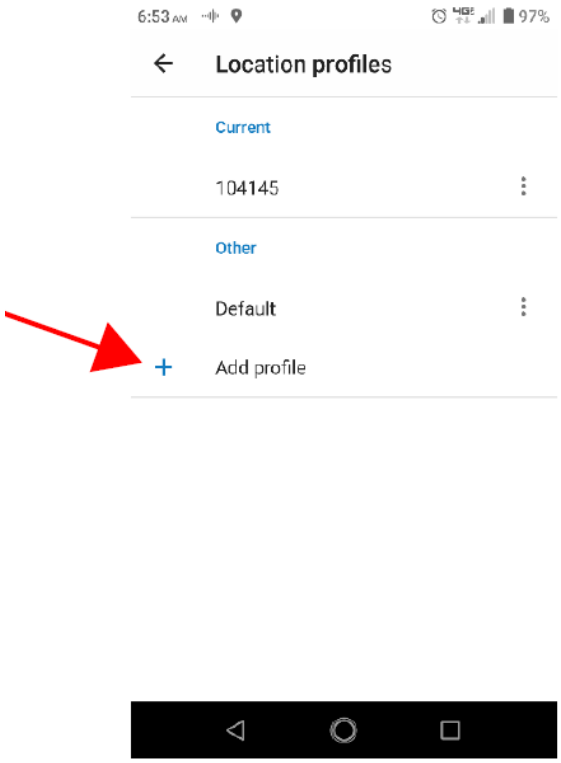


Click on the Profile button (red-arrow above).

The Profile menu is shown:

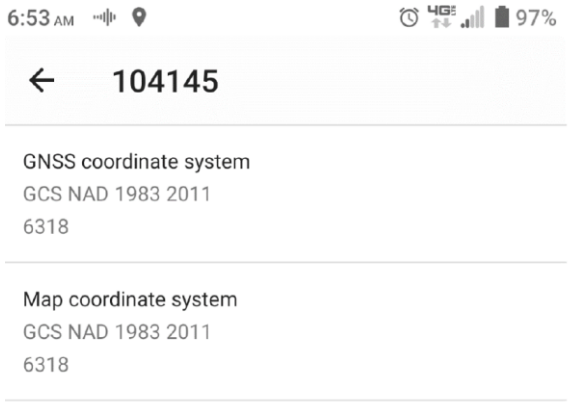


Click on the 'Profile' item.



Click on '+ Add profile'.

Search for and add 104145 as the GNSS coordinate system and the Map coordinate system. Finally name the profile 104145:



This coordinate profile will do a null translation from NAD83 2011 to NAD83 2011 with no additional conversion.