

# GNSS Positioning with Philippine Active Geodetic Network (PAGeNet) Sokkia GRX2 REAL TIME KINEMATIC SURVEY

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	<b>Title:</b> Sokkia GRX2 Real Time Kinematic Survey using Philippine Active Geodetic Network (PAGeNet)	
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This document is approved for the use of  
**National Mapping and Resource Information Authority**



## **TABLE OF CONTENTS**

<b>1 INTRODUCTION .....</b>	<b>1</b>
<b>1.1 Terms and abbreviations .....</b>	<b>1</b>
<b>1.2 Notes .....</b>	<b>1</b>
<b>1.3 Feedback.....</b>	<b>1</b>
<b>2 REAL TIME KINEMATIC SURVEY PROCEDURE.....</b>	<b>2</b>
<b>2.1 Internet via Wi-Fi Connection.....</b>	<b>2</b>
<b>2.2 Controller and GNSS Receiver Connection .....</b>	<b>4</b>
<b>2.3 PAgNet Connection with the GPS Receiver .....</b>	<b>5</b>

## 1 INTRODUCTION

This manual was created by SRDP Consulting Inc. to outline the procedure of Real Time Kinematic Survey operations using Sokkia GRX2 GNSS Receiver with the Philippine Active Geodetic Network (PAGeNet) for the National Mapping and Resource Information Authority.

### 1.1 Terms and abbreviations

The following terms and abbreviations are used in this manual.

SRDP	SRDP Consulting Inc.
NAMRIA	National Mapping and Resource Information Authority
PAGeNet	Philippine Active Geodetic Network
GPS	Global Positioning System
RTK	Real Time Kinematic
AGS	Active Geodetic Station

### 1.2 Notes



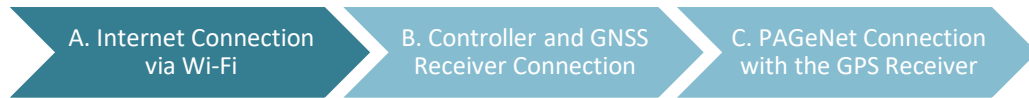
**NOTE:** This points out something important that needs to take into account.

### 1.3 Feedback

This document is a work in progress and experienced surveyors and specialists are encouraged to provide feedback or additional ideas. These suggestions can be sent via email to [support@srdp.com.ph](mailto:support@srdp.com.ph). The suggestions will be subject to editorial review and may be incorporated in the next version of this document.

## 2 REAL TIME KINEMATIC SURVEY PROCEDURE

Workflow for the GPS Real Time Kinematic Survey using **Sokkia GRX2 Receiver** with the **Philippine Active Geodetic Network** are as follows:



### 2.1 Internet via Wi-Fi Connection

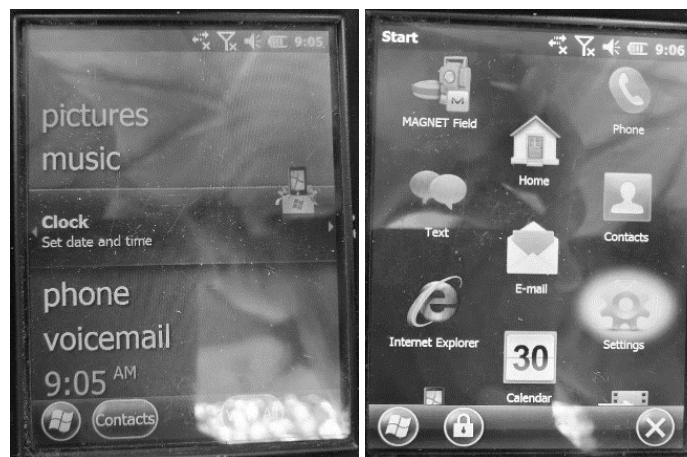
2.1.1 Turn on the **Wi-Fi** internet connection source using a pocket Wi-Fi or Smartphone Mobile Hotspot.



**NOTE:** Depending on the area of survey, use whichever has better connectivity.

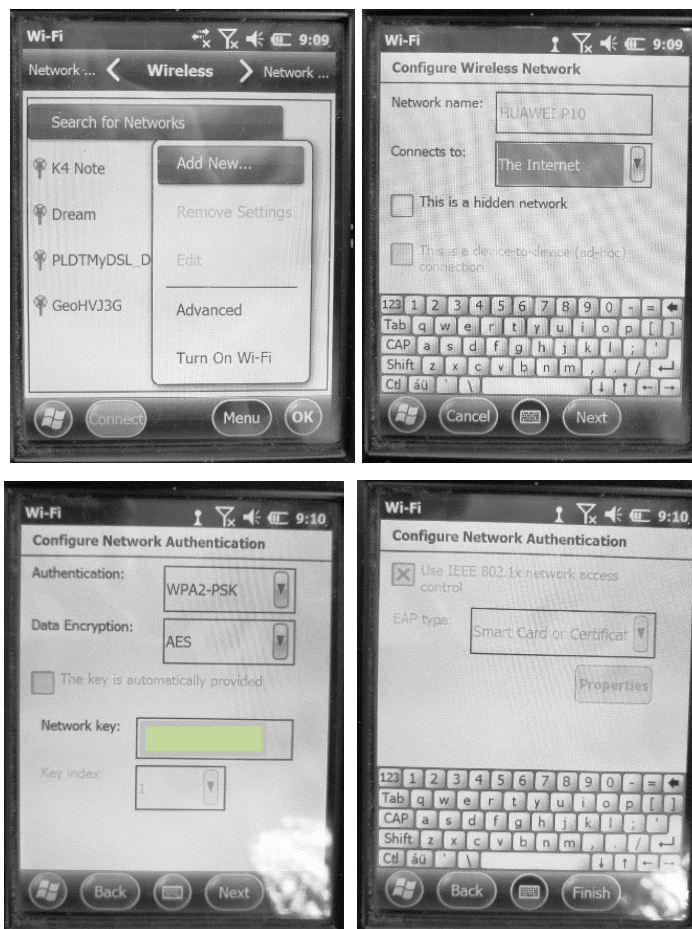
2.1.2 Establishment of **Internet Connection** of the GPS Controller via Wi-Fi

- a) From the **Start** Homepage, click the **Settings** icon to display the **Connections** icon to set up network options.

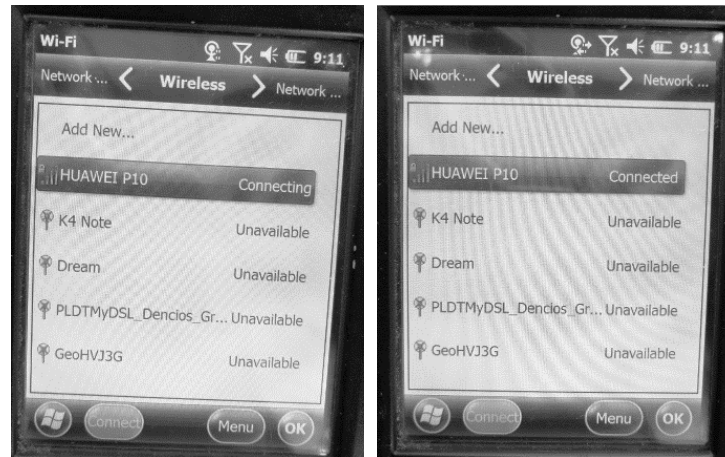




- b) Add a new wireless network by searching all available connections. After choosing your own/personal Wi-Fi connection enter your password in the **Network Key** box. Then click **Finish**.



c) You will see a **Connected** status if the connection via Wi-Fi was successful.

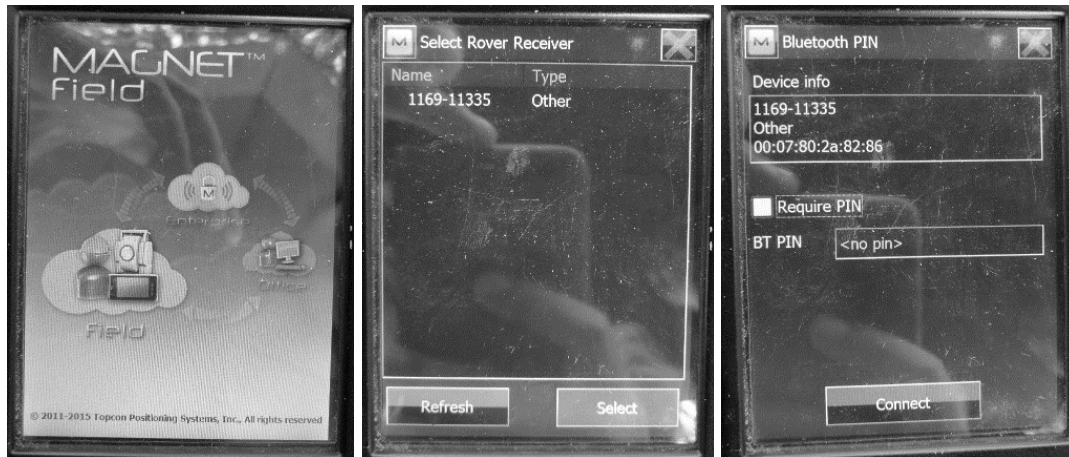


**NOTE:** Access the PAGeNet source table by typing <http://122.55.96.59:2101> in the address bar. It will check both the status of the internet connection and the real time correction service at the same time. If the source table is shown, it means the internet connection and PAGeNet are up. If not, try to access Google to verify if only the real time correction service is offline. If it loads successfully, contact your real time correction service provider. (@2017 NAMRIA PAGeNet Quick Guide)

## 2.2 Controller and GNSS Receiver Connection

2.2.1 To create connection of GPS Receiver and Handheld Controller, open the **Magnet Field** application from the Start Menu. Then select the **Serial Number** of the Rover Receiver to be used.

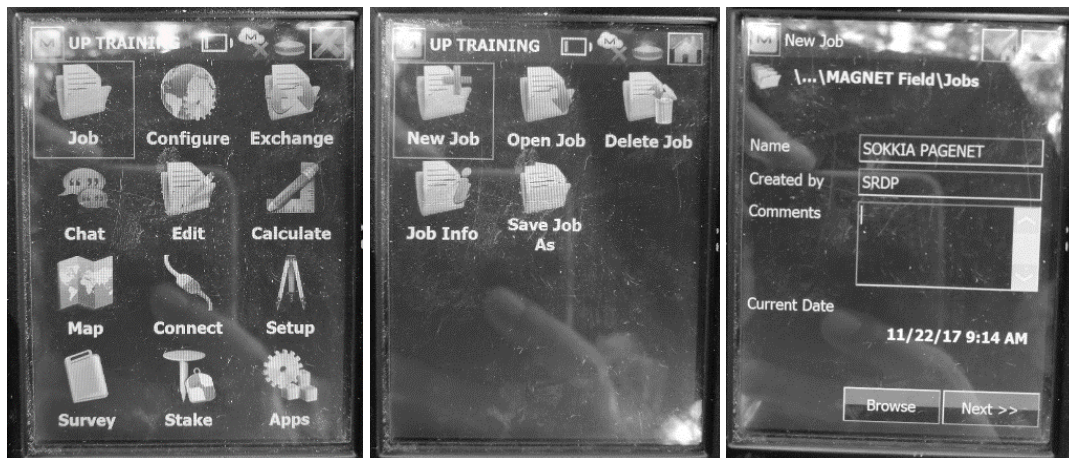




## 2.3 PAGeNet Connection with the GPS Receiver

### 2.3.1 New Job and GPS+ Configuration Settings

- a) **Create a New Job** for the data collection via PAGeNet Real Time Connection, then click **Next**.

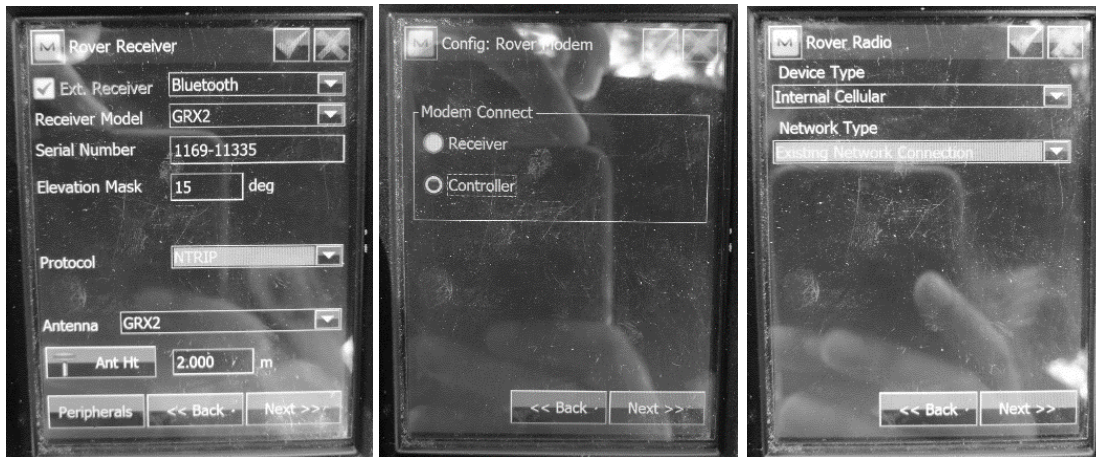


- b) Set up a new **GPS+ Configuration** setting for the PAGeNet Connection using select **Network RTK** and correction settings **Single Base** or **VRS** depending on what PAGeNet data collection you need. Make sure the **Post Processing** box is ticked on.



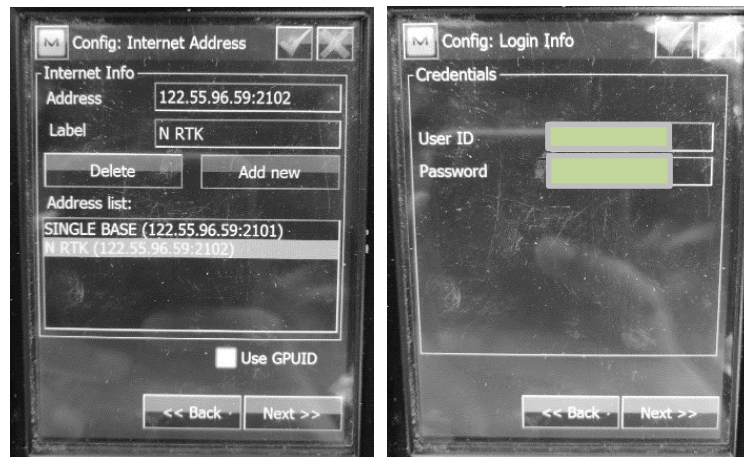
- c) For the *Rover Receiver* settings edit the GPS **receiver model**, **serial number** and **antenna type**. Then the protocol options must be in **NTRIP** (Networked Transport of RTCM via Internet Protocol) option. The **modem connectivity** must be from the controller and use existing network connection as **network type**.





- d) Enter the IP address of the real time correction service provider in the **Address** field and choose between **SINGLE BASE** or **Network RTK (N RTK)** from the address list. Then enter the user's NTRIP PAGeNet credentials in the User ID and Password fields.

<b>PAGeNet:</b>	122.55.96.59
<b>Single-Base Correction:</b>	2101
<b>Network-RTK Correction:</b>	2102



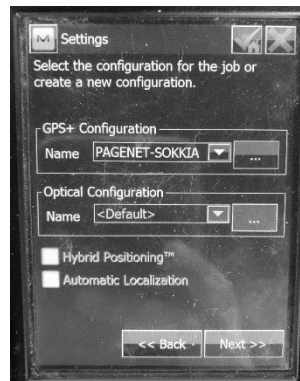
- e) Edit the next settings depending on your project preference (or you may leave them same as default).



**NOTE:** Make sure the All Solution fields for Topo, Auto Topo and Stake Settings are set to **Fixed Only**.

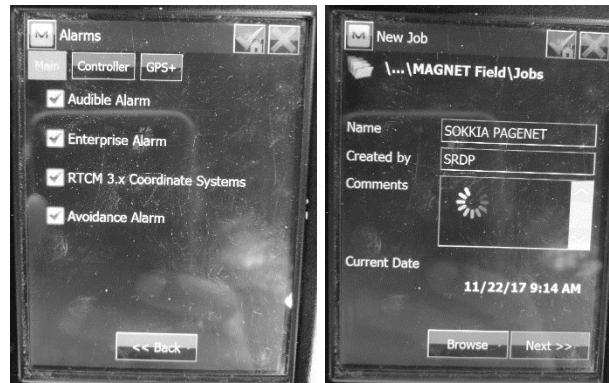


- f) After setting the preferred data collection settings. GPS+ Configuration is now set. Click Next.



- g) Set the Coordinate System, Units, Display and Alarm Settings according to your preference then click Check mark on the upper right corner of the screen to finish creating the job.



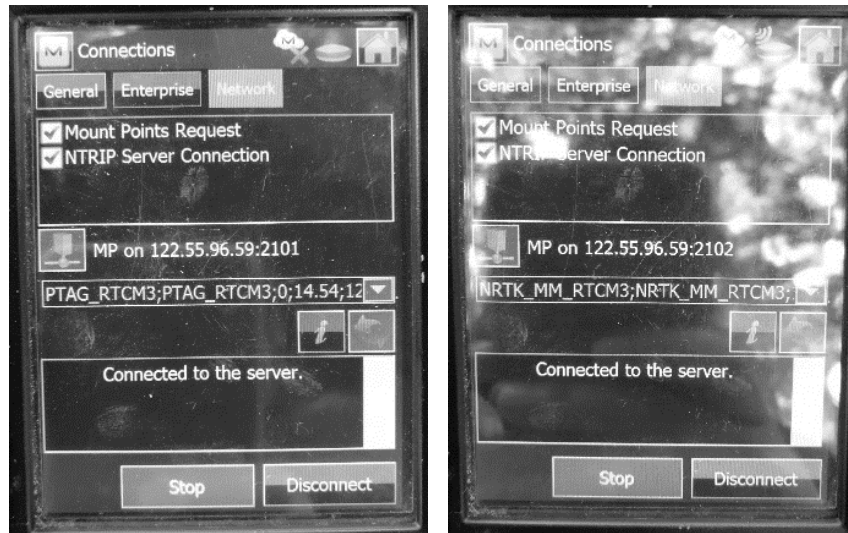


### 2.3.2 Data Collection

- a) Select the GPS Rover Receiver's Serial Number for data collection.



- b) For Single Based and Network RTK, choose the nearest Active Geodetic Station. *Example: Single Based **PTAG\_RTCM3** (corrections will come from the PTAG Active Geodetic Station and the message format is RTCM version 3) and **NRTK\_MM\_RTCM3** for Network RTK. The reminder box below must show *Connected to the server* Status.*



c) You can now start gathering data using **Topo** Feature.

