Installation Guide

RTK Bridge® -X

Integration with:

Topcon® AGI-3® and AGI-4®

ntuicom®

Overview

The AGI-3 and/or AGI-4 receiver(s) are typically configured to accept RTCM format RTK corrections from an Intuicom RTK Bridge®-X which in turn has been configured to connect to a GPS/GNSS reference network.   The intended audience for this document is a dealer or integrator familiar with the Topcon receivers and access to the Set-up menus as well as general familiarity with the Intuicom RTK Bridge–X. The Intuicom RTK Bridge–X User Guide covers the steps necessary for its configuration.

1   Requirements for Installation

1.1   Required Information

In order to operate an Intuicom RTK Bridge–X, you are required to have the necessary information to access and log in to the Real-Time Network. This information is entered into the RTK Bridge–X and stored in a profile. More details on setting up an RTK Bridge–X is available in the RTK Bridge-X manual.

- IP address,
- TCP port,
- NTRIP mountpoint name,
- username and password for access to the real-time GPS/GNSS network

1.2   Required Equipment

1.2.1 Intuicom Equipment and Accessories

1. Intuicom RTK Bridge–X with activated data provider account (Verizon, AT&T, etc…)
2. Intuicom RTK Bridge–X to Topcon data/power cable:
    o   AGI-3 – [P/N: XRTKCAB-AGI3] (Deutsch to crimped leads and SAE)
    o   AGI-4 – [P/N: XRTKCAB-AGI4] (Deutsch to Deutsch)
3. Intuicom RTK Bridge–X Cellular/GPS antenna/cable:
   [P/N: FIP4-MMDM-MM (magnetic mount)]

1.2.2 Other Equipment and Accessories

5. Topcon receiver (AGI-3 or AGI-4) with RTK unlocked
6. Topcon monitor (Example given is for the X30, but any monitor could be used)

2 Installation Instructions

Below is the installation Diagram for the recommended installation of the Intuicom RTK Bridge–X utilizing the equipment noted above.

Diagram 1
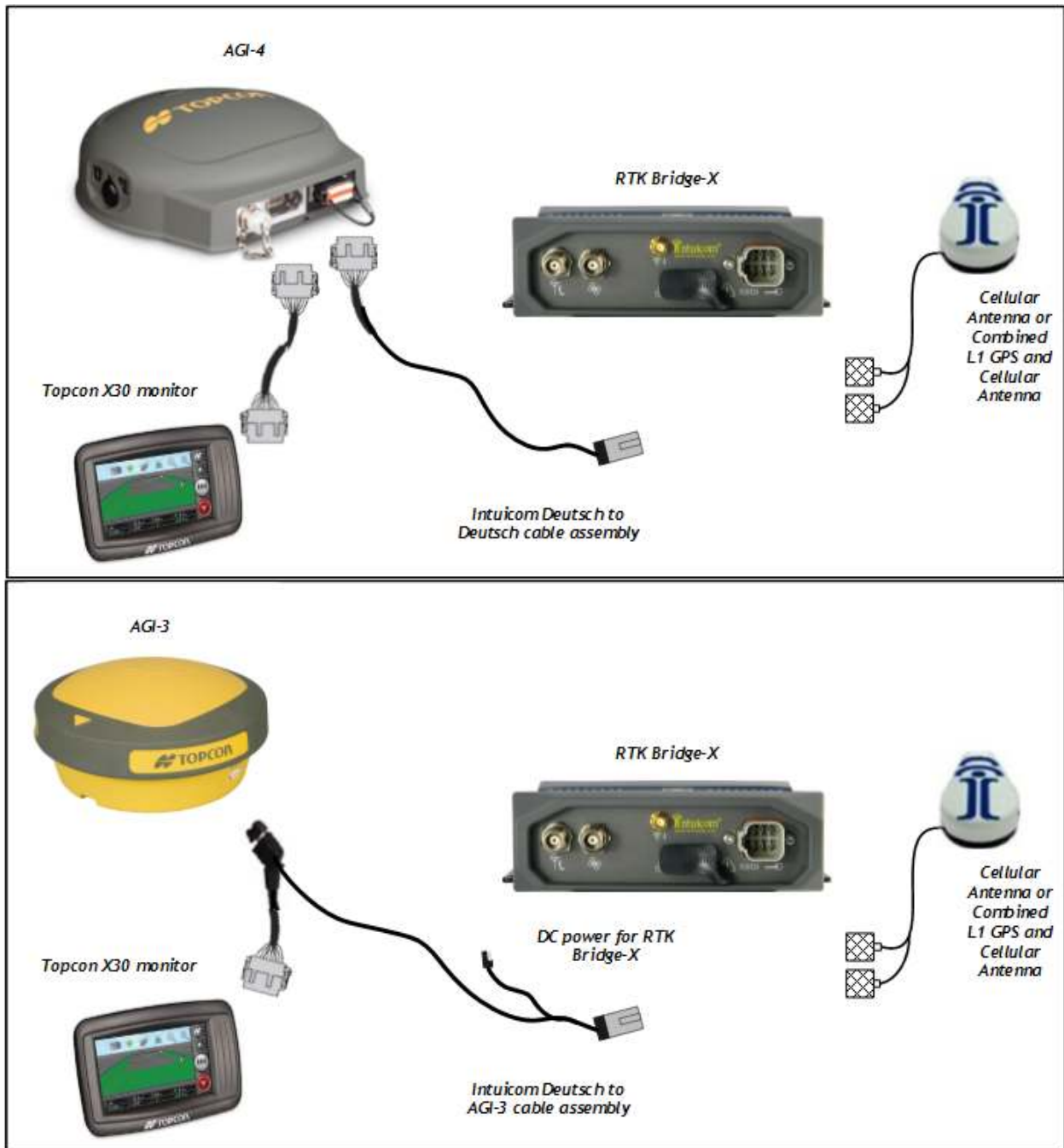
2.1 Configuration

- Configure the Intuicom RTK Bridge–X to connect to GPS/GNSS Reference network and obtain RTCM correction data stream from an appropriate single reference station, such as a VRS.

- Configure the resulting RTK correction data to be output at a known baud rate (a baud rate of 38400 is recommended).

- Confirm GPS and cellular antenna (typically a combined antenna with two coaxial cables with TNC connectors) are connected and placed where they have good sky view and good cellular signal.

2.2 AGI-4 cable pinout

- Verify the pinout on the Deutsch connector on the RTK Bridge–X to AGI-4 data/power cable to match the appropriate pin-out. See Pin-out Diagram 1

Pin-out Diagram 1

Deutsch	Cable Color	Signal	AGI-4 AUX connector
3	Red	Power	2
6	Green	Receive (from RTK Bridge-X to remote device)	11
1	White	Xmit (to RTK Bridge-X from remote device)	10
4	Black	Power Ground	9
4	Brown	Signal Ground	12

2.3 AGI-3 cable pinout

- Configure the pin-out on the Deutsch connector on the RTK Bridge-X to AGI-3 data/power cable to match the appropriate pin-out. See Pin-out Diagram 2

Pin-out Diagram 2 choose either Port A or D for AGI-3

Deutsch	Cable Color	Signal	AGI-3 Port A	AGI-3 Port D
4	Brown	Signal GND	14, 16, or 27	14, 16, or 27
1	White	Xmit (to RTK Bridge from remote device)	35	33
6	Green	Receive (from RTK Bridge to remote device)	25	23

- Using the Intuicom RTK Bridge-X to AGI-3 data/power cable, connect the RTK Bridge-X data port to the data port on the AGI-3 as shown in Diagram 2.

Diagram 2

Example of how to connect the data power cable into the boot for the AGI-3 Data connector

- Please Note: Intuicom recommends sealing any and all connections to prevent accidental water intrusion. Seal can be created by using silicone, heat/cold shrink, etc.

2.4   Configuring the X30 to receive an RTK corrected position

- From the main menu select System -> GPS -> Correction

- Select Correction Source
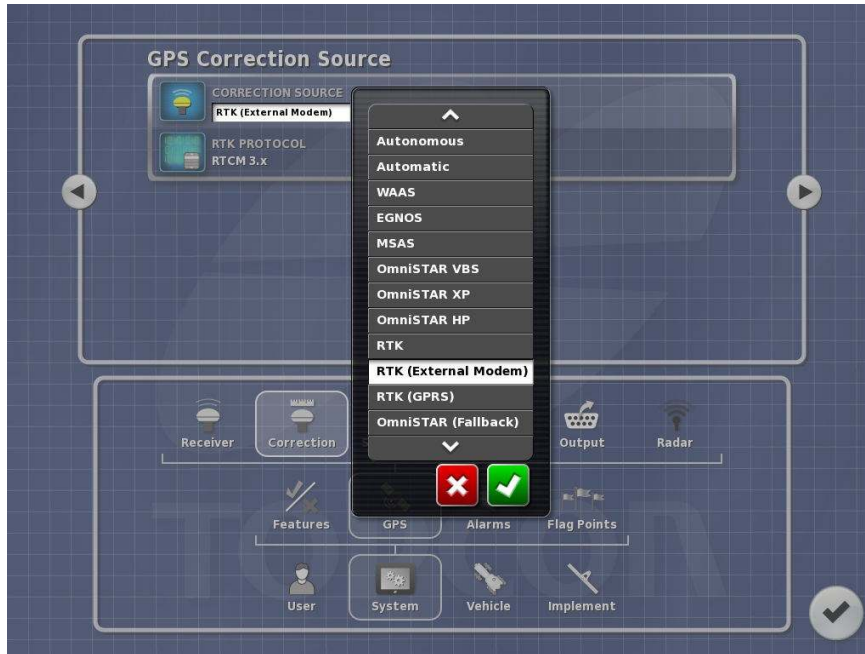
- Select RTK (External Modem)

- Select Correction Type (RTCM 2 or 3)

The AGI-3 and/or AGI-4 should now be receiving the correction from the RTK Bridge and the Monitor should display an RTK Fix.

For Technical Support of the RTK Bridge-X, Intuicom recommends "Intuicom Remote Support", please contact Intuicom for details on this real-time support program.

For general technical support, please contact us at <u>support@intuicom.com</u> or call us at 303.449.4330.