Intuicom®

RTK Bridge-M ™ Installation Guide

For
Trimble® CFX/Case IH FM-750

Intuicom, Inc.
1880 S Flatiron Court
Boulder, CO 80301
(303) 449-4330
www.intuicom.com

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1 Overview

The Trimble® CFX/Case IH FM-750 is typically configured to accept CMR format RTK corrections from an Intuicom RTK Bridge-M 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 CFX 750 and generally familiar with the Intuicom RTK Bridge-M. The Intuicom RTK Bridge-M User Guide covers the steps necessary for its configuration.

2 Requirements for Installation

2.1 Required Information

In order to operate an Intuicom RTK Bridge-M, 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-M and stored in a profile. More details on setting up an RTK Bridge-M is available in the RTK Bridge manual.

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

2.2 Required Equipment

2.2.1 Intuicom Equipment and Accessories

1. Intuicom RTK Bridge-M with activated data provider account (Verizon, AT&T, etc…)
2. Intuicom RTK Bridge-M to Trimble® CFX/Case IH FM-750 data/power cable:
   [P/N: FIP4-MRTKPWDT-EZ] (Programming cable RTK Bridge-M Deutsch to two DB9 with SAE to DC power)
3. Intuicom RTK Bridge-M Cellular/GPS antenna/cable:
   [P/N: FIP4- FIP4-MMDM-MAX (magnetic mount)]

2.2.2 Other Equipment and Accessories

4. PC with serial port
5. Trimble CFX 750 with RTK (CMR) option enabled and Port B available
6. Trimble CFX 750 Data Cable and source of power for Trimble® CFX/Case IH FM-750 (or any cabling system typically used to run the Trimble® CFX/Case IH FM-750 for configuration)

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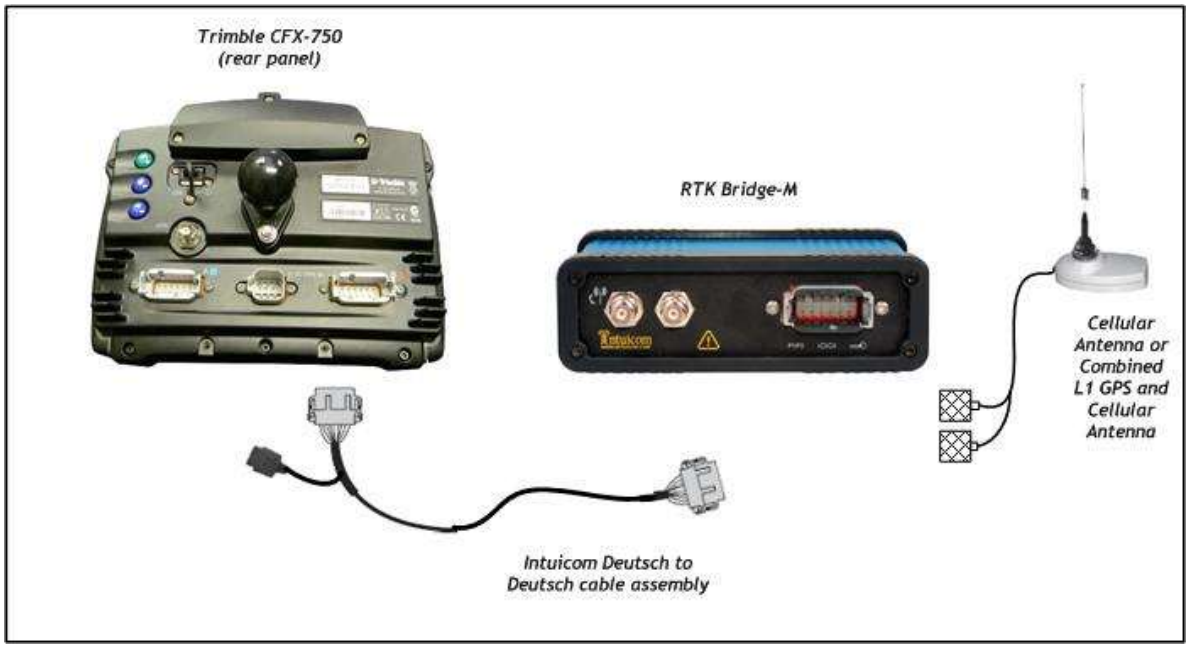
3 Installation Instructions

Below is a diagram for the recommended installation of the Intuicom RTK Bridge-M utilizing the equipment noted above.

Diagram 1



3.1 Configuring the RTK Bridge–M to send Corrections to the CFX-750

NOTE: Be sure you have the RTK option unlocked before proceeding. An unlock code can be obtained from your Trimble or Case IH dealer.

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

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

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- 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.

- Independently confirm the RTK correction data stream from the data port on the front of the unit. This can be accomplished by viewing data output from the data port into any terminal emulation software (ie. HyperTerminal) and RTK Bridge Programming Cable. Details can be found in the Intuicom RTK Bridge-M User Guide.

- Configure the pin-out on the Deutsch connector on the RTK Bridge-M to CFX 750 data/power cable to match the appropriate pin-out. See Pin-out Diagram 1

Pin-out Diagram 1

Deutsch	Cable Color	Signal	Port B
1	Red	Power	9
2	Black	Power GND	10
3	Brown	Signal GND	5
4	White	Xmit (to RTK Bridge from remote device)	4
5	Green	Receive (from RTK Bridge to remote device)	3

- Using the Intuicom RTK Bridge-M to CFX 750 data/power cable (FIP4-MRTKPWDT-EZ,) connect the RTK Bridge-M data port to the B Port on the CFX 750.

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Power on 750 unit using power button on the upper right back of the display.

The Welcome screen appears. Select the green check box.

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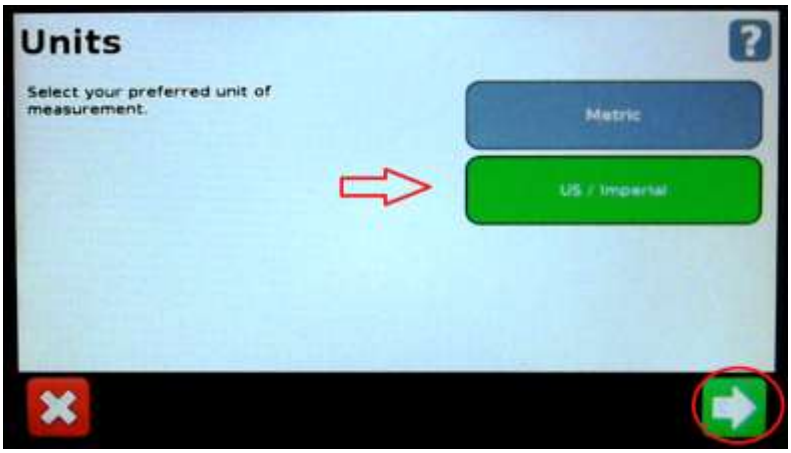
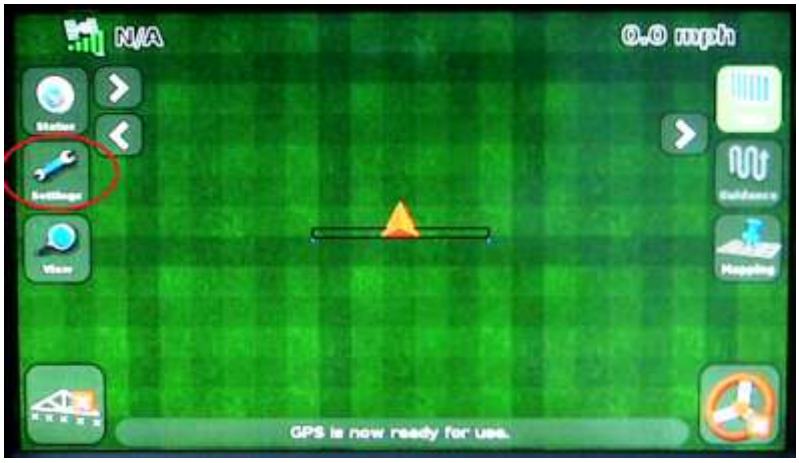
Select “Units” – “Meters” or “US/Imperial” then select the green arrow.



- “Display Quick Start Wizard” screen appears
- Answer “Yes” for our purposes. In the future you can decide if you’d like the Wizard to appear.

Select the “Settings” icon from the Main Menu (looks like a wrench)



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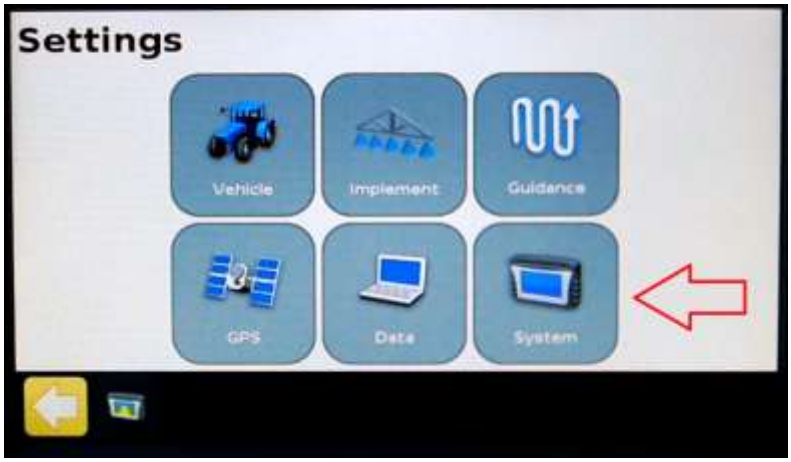
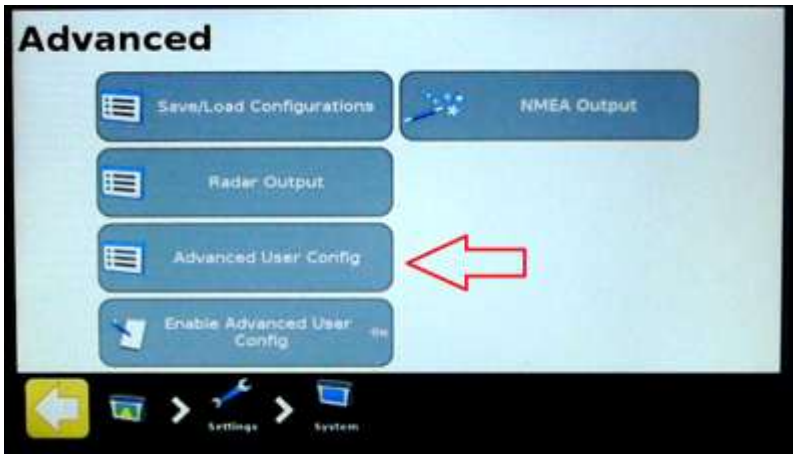
The "Settings" menu appears. Select "System"



Select "Advanced"

Select "Advanced User Config"



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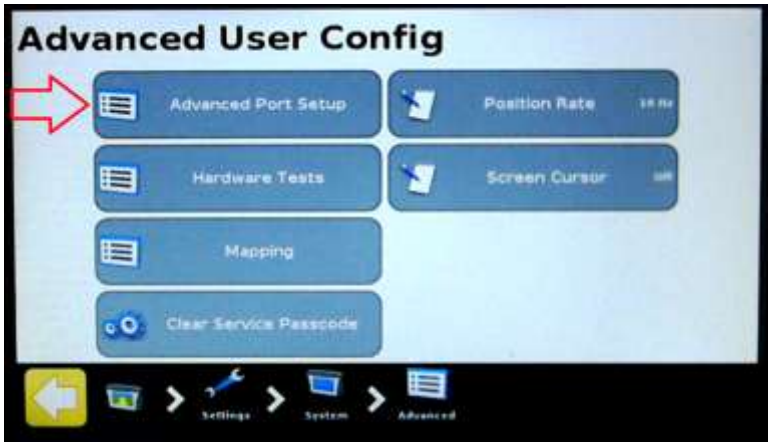
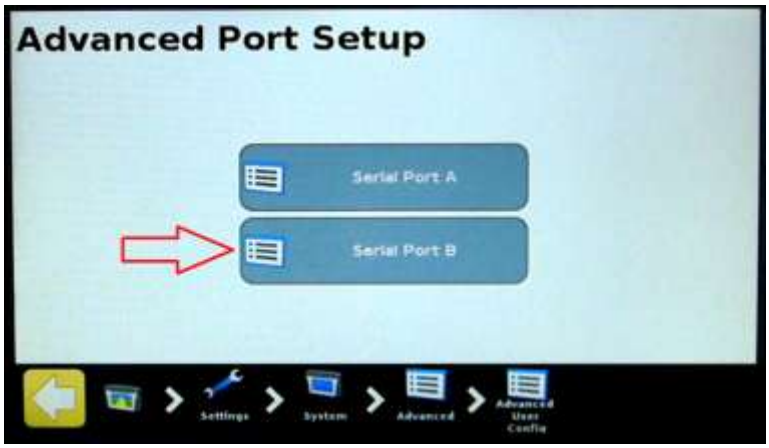
Bypass the warning screen by selecting the green “check” icon

- The “Advanced User Config” menu appears.
- Select “Advanced Port Setup”



Select “Serial Port B”



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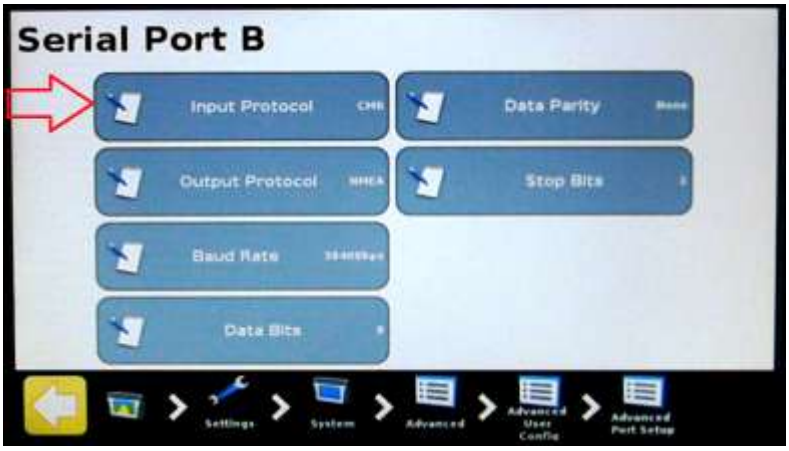
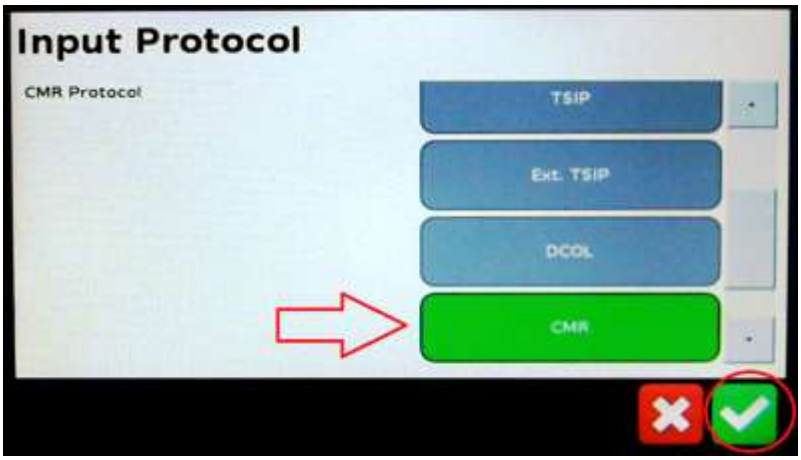
Select “Input Protocol”



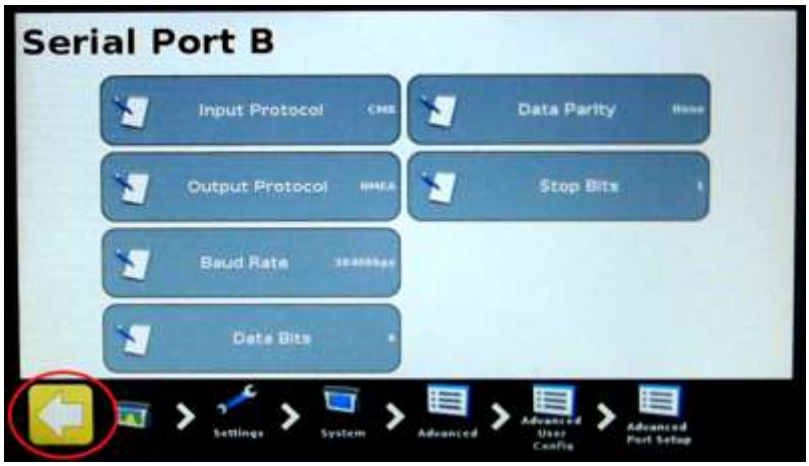
Select the type of correction data format that will be received from the NTRIP Caster, either “CMR” or “RTCM”. In this case, choose “CMR” and select the green check icon.



On the next screen which reads “Serial Port B” verify the following:

- Baud rate = 38400
- Data bits = 8
- Data parity = none
- Stop bits = 1.

Then, using the yellow “back” arrow, return to the main “Settings” screen.



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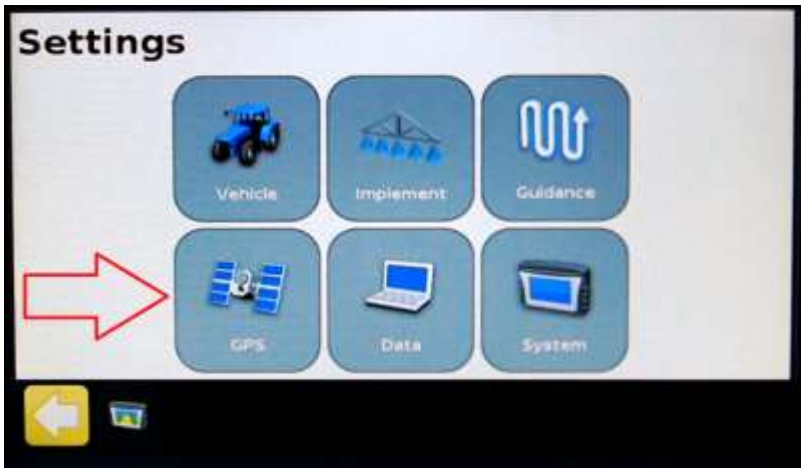
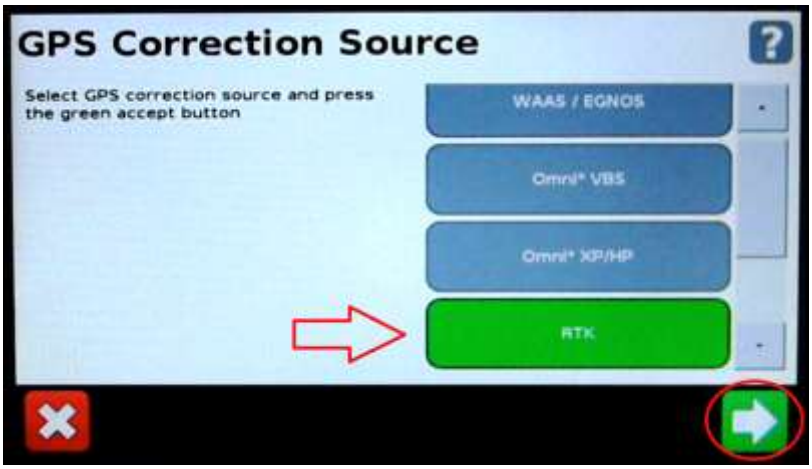
From the “Settings screen, select “GPS”



Now select “GPS Setup”

“GPS Correction Source” screen appears. Verify that “RTK” is selected, then select the green forward arrow



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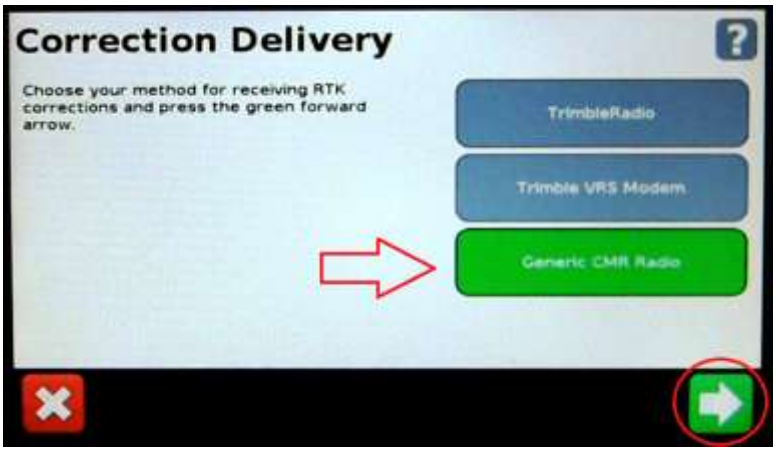
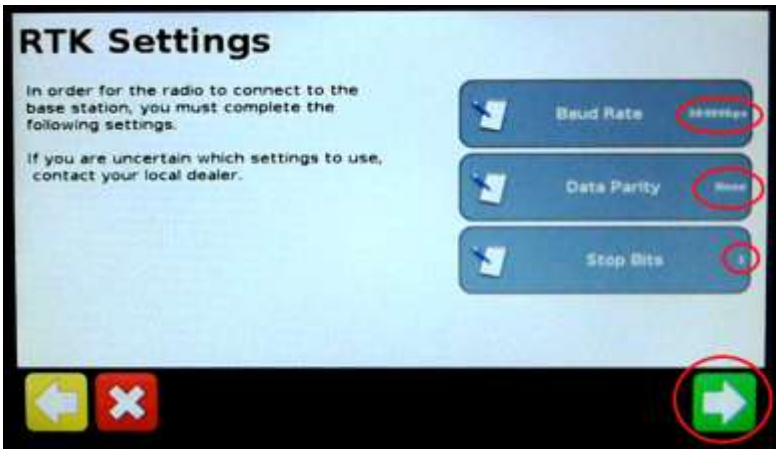
- "Correction Delivery" screen appears
- Select "Generic CMR Radio", then select the green forward arrow



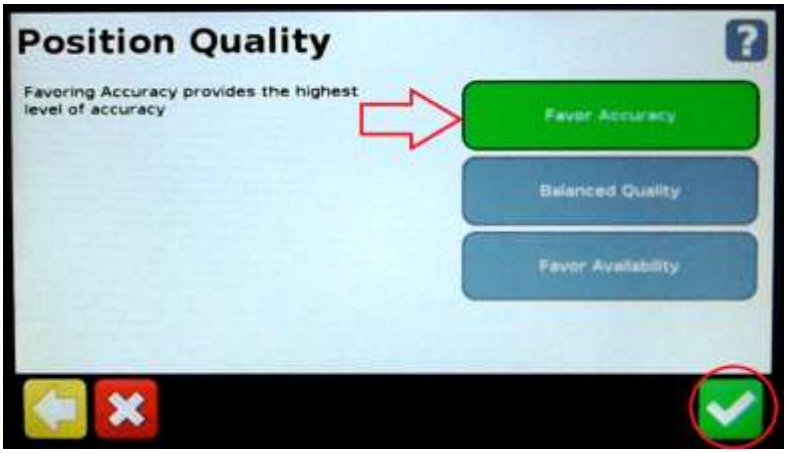
"RTK Settings" screen appears.
Verify:

- Baud rate = 38400
- Data parity = none
- Stop bits = 1

When finished, select the green forward arrow



"Position Quality" screen appears
The user may choose from "Favor Accuracy" "Balanced Quality" or "Favor Availability"
(For our purposes, we will choose "Favor Accuracy"
When finished, select the green check icon



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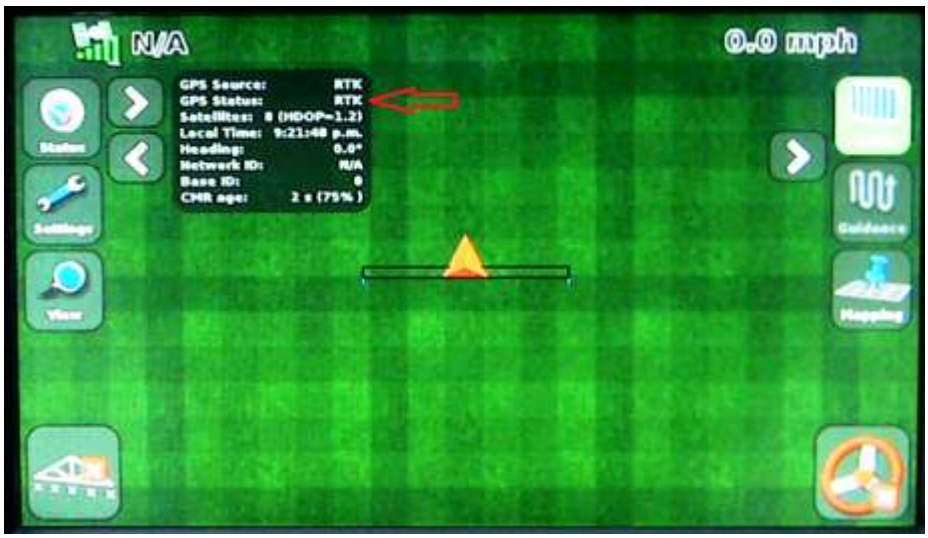
This returns you to the "GPS" screen. From here, select the yellow arrow "back" arrow to return to the "Main" screen (tractor/arrow icon centered in green field, icons along the left and right borders)

From the Main screen, select the round "Status" icon from the uppermost left.

A small screen within the Main screen appears, displaying data about the Field name, Field Area, and other parameters. Selecting the "Status" icon a second time brings up another small screen which displays real time GPS data.

From this screen, verify the GPS Status is "RTK"



Configuration is now complete. If you wish to send GPS data from the Trimble® CFX/Case IH FM-750to the RTK Bridge (if the RTK Bridge-M isn't equipped with its own GPS for example) then proceed to Section 3.2.

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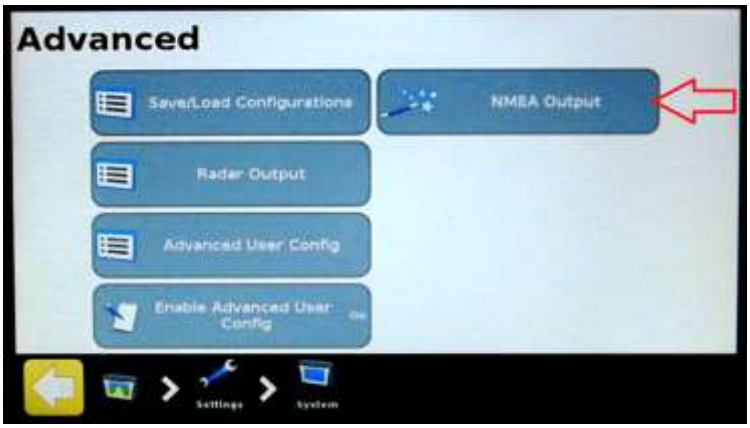
3.2 Sending GPS Position to the Intuicom RTK Bridge–M from the Trimble® CFX/Case IH FM-750

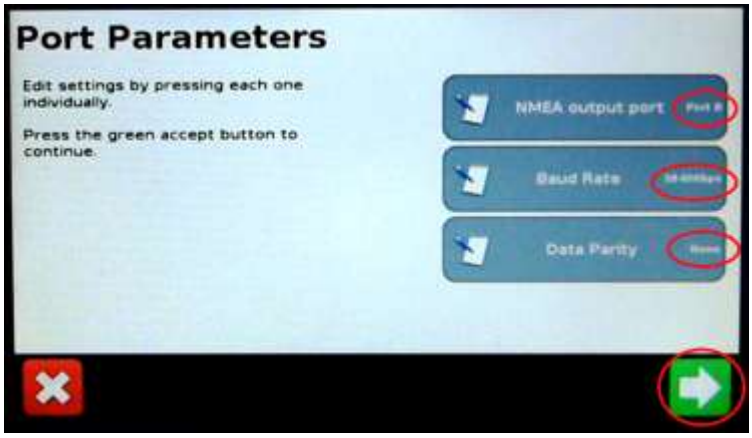
If the Intuicom RTK Bridge does not have an internal GPS or you want to supply the GPS position for another reason to the RTK Bridge from the Trimble® CFX/Case IH FM-750:

From Main screen:
- Select "Settings"
- Select "System"
- Select "Advanced"
- Select "NMEA" Output



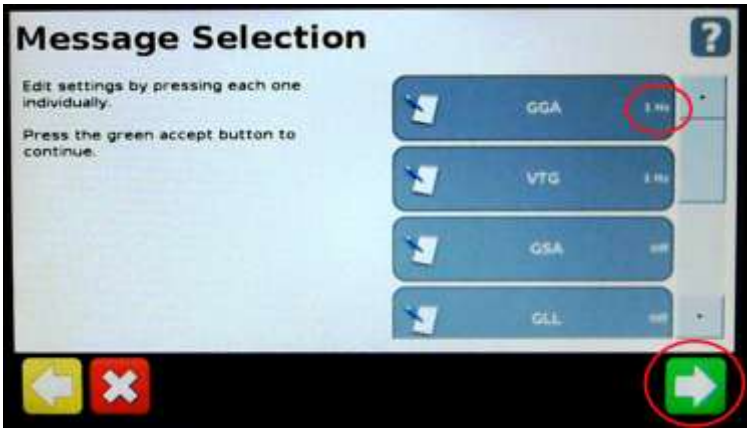
This brings up the Port Parameters screen. Ensure the following settings are set:
- NMEA: Port B
- Baud rate: 38400
- Data Parity: None

Continue by selecting the green check icon



This brings up the "Message Selection" screen.

Verify GGA is set to 1 Hz, then proceed to next screen.



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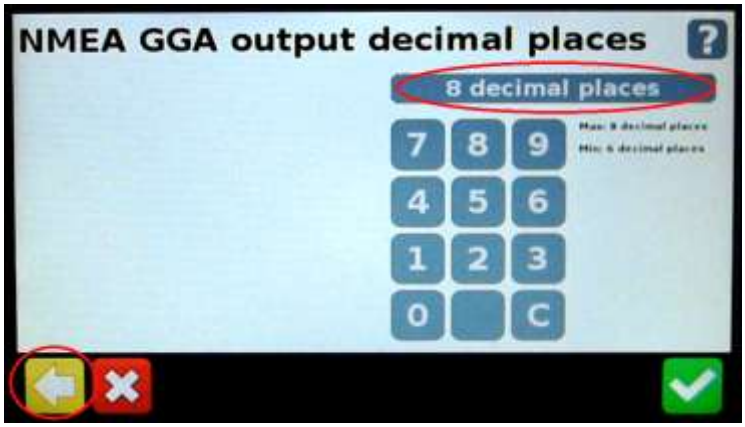
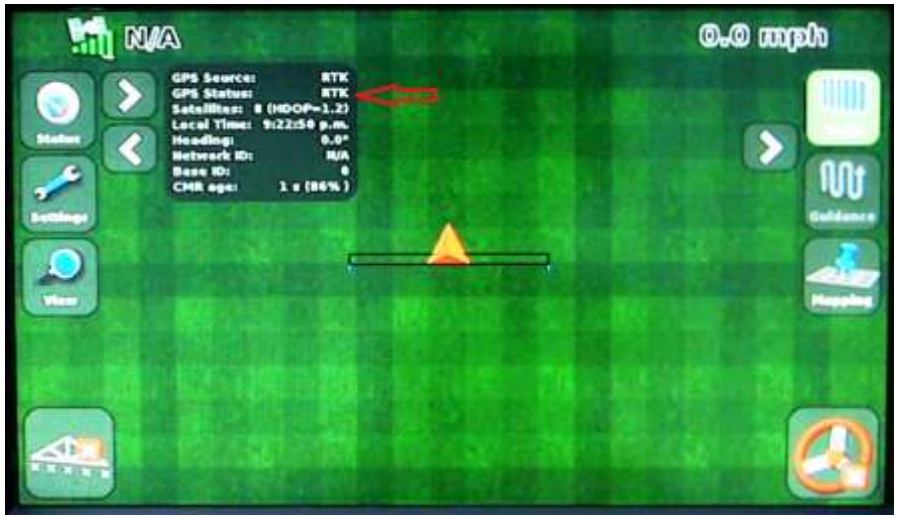
- Verify the NMEA GGA output decimal places is set to “8” – this should be the default setting.
- Use the yellow back arrows to return to the



A small window with real time data should pop up within the Main screen.

Verify GPS Status is “RTK”



Configuration is now complete. You should be sending GPS/GNSS positioning data from the Trimble® CFX/Case IH FM-750 to the Intuicom RTK Bridge–M.

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