



Topcon X20: Simulation, Guidance, and Sprayer Setup

GPS SIMULATION

Connect Y-sim cable

1. Connect COM 1 GPS to COM 1 on ZYNX.
2. Connect COM 3 GPS to COM 3 on ZYNX.
3. Connect Maplink to COM 2 on ZYNX.

Close all applications and open **GPSSIM**

1. Make sure **COM**Port is set to **3**.
2. Click **Connect to COM Port**.
3. Click **Move**.
4. Click **WHEEL**.
5. Click **AUTO**.
6. Click **HIDE**.



GUIDANCE SETUP

1. Open **ZYNX1**.
2. Click **STOP**. If you do not click stop, the program will by default open.
 - a. From here you can click **ALIGN** to align the screen.
 - b. If you want to upgrade the software.
 - i. Plug in USB jumpdrive with the software on it.
 - ii. Click **UPGRADE**.
 - c. Clicking on one of the nine boxes will turn that product on or off.
 - d. Make sure that both **Guidance/Steer Assist** and **Sprayer Rate Controller** are turned on.
 - e. Click **Start**.
 - f. The pulsating cat means that GPS data is being received. You can click on the pulsating cat to see GPS data.
3. Click **General Setup** at the bottom of the screen.
 - a. Turn grids on. The minimum grid spacing is 33ft.
 - b. Set **Lock Direction** to **Left First** and **Overlap** to **0.0ft**.
 - c. Set **UNITS** to **Imperial** and **Lt/Long**.
 - d. **OFFSETS**
 - i. Set offsets by following diagram.
 - ii. **Flow Offset** – Distance from GPS antennae to spray boom.
 - e. **GPS**
 - i. When using GPS Simulation
 1. Port – None
 2. Baud – 19200
 - ii. Otherwise set **Port/Baud** to match GPS configuration
 - f. Make sure that only **Vehicle Noise** and **Simple Outlines** are checked
 - g. From here you can also change the backlight color. A dark backlight is better for night guidance
 - h. Click **Steering** and set **Port** and **COM** accordingly (ie. **Port** to **COM 1** and **Baud** to **19200**) and the **Aggressiveness** between **80** and **100**.
 - i. **Flag Settings** - This is if you want to drop points as you are driving through the field, you can custom set what the points are.

- j. **Working Path** – Designates where the file will be saved.
 - k. **Automatic Section Control**
 - i. This sets the controls for the boom sections.
 - ii. Click **Avoid Gaps** on **Mode**.
 - iii. Set the **Small Gap Size** to **0.3 meters** (~ 1 ft).
 - iv. Click **OK**.
 - l. Click **OK**.
4. Click on the **FIELD** button at the bottom of the screen.
- a. Click the **Field** button once more.
 - b. From this screen you can select and save up to 9 different fields.
 - c. To load a field:
 - i. Select what field number you wish to load (1-9) and then click load.
 - ii. You must already have a pre-saved field on your computer and it must be saved in the working path you designated in step 3-j.
 - iii. Once your field is selected, click **OK**.
 - d. Other options are available if you click the **Save** button
 - i. Select the field you wish (1-9) and click the **Save** button.
 - ii. Load Field will allow you to load a different file to save.
 - iii. **Save As** does a **Save**, but also allows you to input information such as: **Customer Name, Farm Name, Field Name, Product Name**, etc.
 - iv. The **Print** button allows you to print as well as input some of the same information as the **Save As** button. Maps printed from here are formatted and printed with all the information you specify.
 - v. The **Options** button allows you to access certain options such as, under the plotting tab, along with plot style and other options, you can select **Animate Drawing**. Adjust your delay depending on the amount of area sprayed. Usually 5-20msec works well.
 - vi. **Close** will take you back to the **Field Menu**.
 - vii. **OK** will take you back to the Guidance screen.
 - viii. **Back** will take you back to the main screen.

SPRAYER SETUP

1. Click on the area just above the **Guide, Field, General Setup**, and **View** buttons.
2. This screen displays the preset amounts to spray as well as being able to manual adjust spray volumes, view tank level, tank volume, and from here you can adjust all your configurations.
3. Click **Main Menu**.
 - a. Click **Options**.
 - b. Click **Change/View Configuration**.
 - c. From this screen you can select all the configurations for your sprayer.
 - d. **Sections** tab.
 - i. Select the number of sections your sprayer has.
 - ii. Select the width for each section.
 - iii. Select the number of nozzles.
 - e. **Switches** tab.
 - i. For Simulation mode, you want all External switches disabled.
 - ii. This will not be the case when spraying.
 - f. **Presets** tab.
 - i. Here you can preset what will be sprayed.
 - ii. For example if are spraying Roundup, you can set it up here.

- iii. Click **Change Preset** List
- iv. Enter the name and the calibration factor
- v. To calibrate sprayer utilizing a Raven Flow Meter, multiply Flow Meter*0.1
- g. **Sim** Tab.
 - i. NEVER TOUCH ANYTHING IN THIS TAB.
 - ii. This tab is only used by the manufacturer for troubleshooting.
- h. **Setup** tab.
 - i. Make sure that your wheel factor is set at a minimum of 1 ft distance/pulse.
- i. Once all your setup is complete, click **Done**, and then click **Save As User Configuration**.
 - i. If you do not **Save As**, your changes will not take effect.
- j. Click **Close**.
- k. You are now back to the Main Sprayer page
- l. Click on the tank.
 - i. On the right you will see your tank capacity, preset rate 1 and 2, preset name and your calibration factor.
 - ii. Preset Rates 1 and 2 allows you to preset two common rates you might use.
 - iii. Increment allows you to change off these presets at certain increments.
- m. At the very top of the screen, you will see circles containing grids.
 - i. These represent your boom sections.
 - ii. Clicking on one will turn the boom section off or on.
- n. To start spraying, Click **Master Switch Off**, and it will turn green and be on.
- o. Then click **Guidance**.
- p. You can now start driving and you should see the swath being formed by the sprayer.

ADDITIONAL NOTES

Auto Section Control – This turns boom sections on and off automatically depending on what has been sprayed. This will eliminate over spray or areas being left un-sprayed.

Variable Rate Control – If you have a manual switchbox, you need the Sprayer ECU interface. With this interface, the Raven harness plugs straight into the side of the box.

ZYNX X20 can do 9 fields on the fly.

GPS Talk Program – This program helps you connect to external GPS receiver. It will scan the baud rates and then set your **GPS Antennae** to work at a **19200 baud rate**.

ProCal Program – The setup in this program must be correct in order to use the simulation steering. Make sure the following settings are selected under each of these menus:

1. Config = wheely09.dll
2. GPS = com 1