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NoTraffic Quick Start Guide

Support

Technical support is available 24/7/365 by phone or email.

Phone: +1 202-800-1890

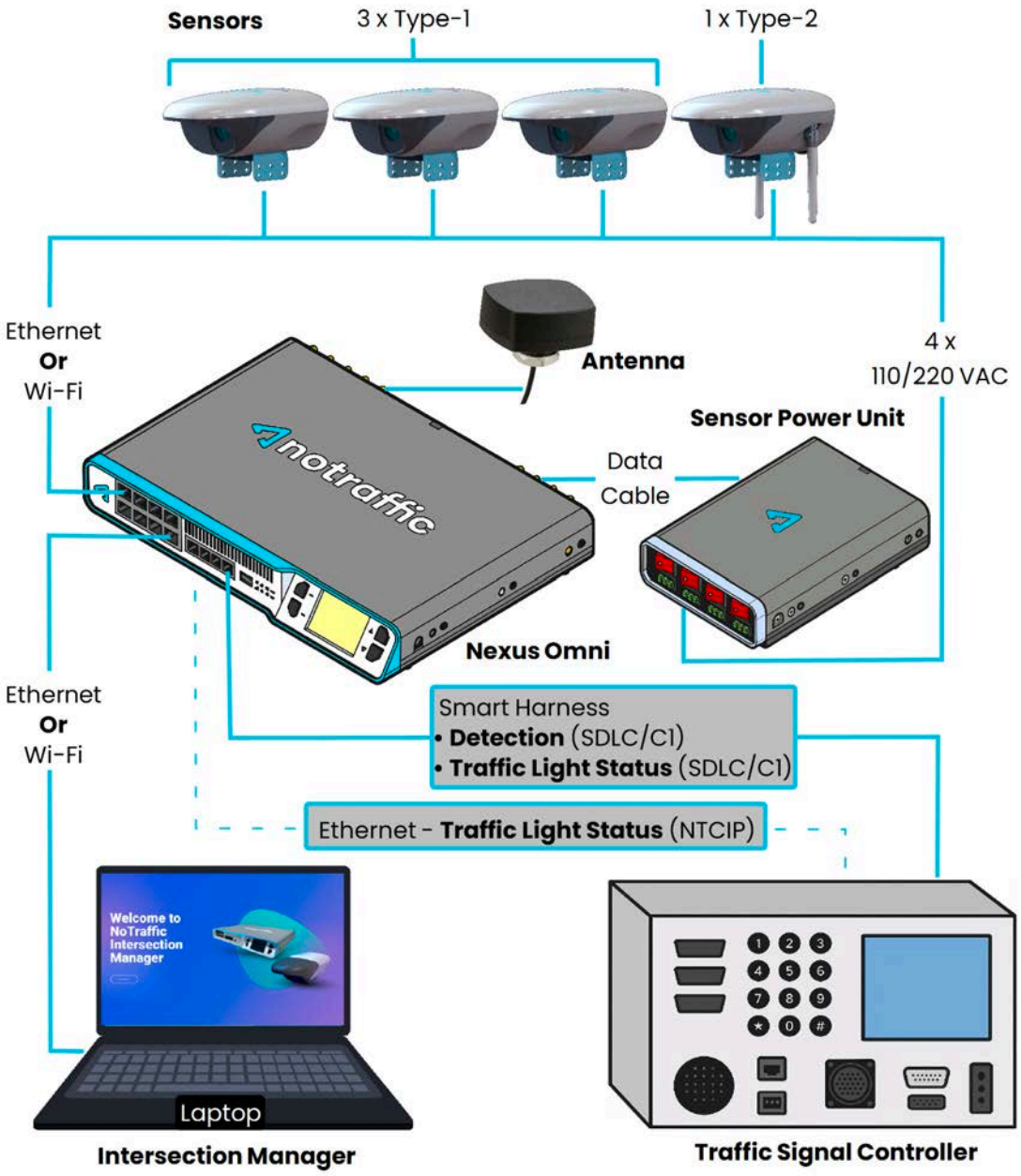
Email: support@notraffic.tech

NoTraffic System Overview and Definitions

The NoTraffic Mobility Platform is composed of the following major hardware, software, and support elements:

- Nexus Omni – Installed in the cabinet and receives detection data from the Sensors and places calls to the traffic controller. The Nexus Omni connects to the cloud-based Mobility OS and runs applications like Optimization Mode for improved traffic safety and performance.
- Sensor Power Unit – Powers the Sensors and integrates with the Nexus Omni to control power supply to the Sensors.
- Type-1 Sensor – Detects and classifies road users using integrated video and radar in various weather and lighting conditions.
- Type-2 Sensor – Provides the same detection and classification capabilities as the Type-1 Sensor and adds a built-in C-V2X RSU for direct V2X applications.
- Smart Harness – A device that bridges existing analog Traffic Light System (TLS) and Detection communication cables with a unified connection to the Nexus Omni.
- Antenna – The antenna ensures a reliable signal for LTE, Wi-Fi, and GPS.
- Intersection Manager – Software installed on the Nexus that helps to enable local management of the intersection.
- Installation Assistant – Software installed on the Nexus that helps to build, aim, and configure the intersection. Part of Intersection Manager.

- NoTraffic Operations Center (NOC) – The NOC is our US-based 24/7 managed service, that performs monitoring of all edge devices, remote troubleshooting, over-the-air service and updates, and responds to system alerts.



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Preparing to Install NoTraffic

Power Cables and Mounts for Sensors

- Pull cable (14–18 AWG, 3-conductor stranded copper) from cabinet to mounting locations.
- Install mounts and Sensors.

Assign IP for City Network (optional)

- If the City will add NoTraffic to their network, provide the assigned IP & Subnet.

Mobility OS Accounts & Alerts

Email: support@notraffic.tech with the following:

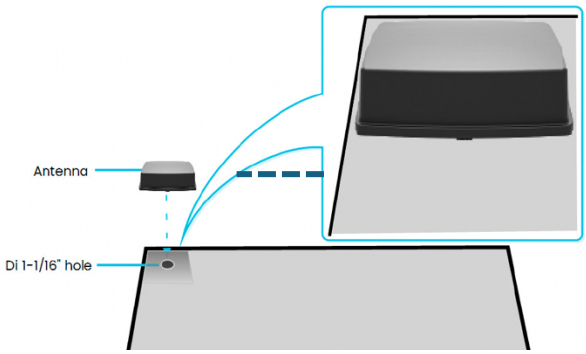
- Provide email addresses for user accounts.
- Provide any specific alerting procedures to the NOC team.

Cabinet Installation

Install Nexus Omni, SPU, and antenna

- Mount Nexus and SPU
- NOTE: Do not plug in the Nexus Omni or SPU yet

Install Antenna



- Locate antenna on top of traffic cabinet or on antenna bracket.
- Drill 1″ hole in mounting surface
- Remove adhesive cover on bottom of antenna and press to mounting surface.
- Hand-tighten antenna nut.
- Apply a silicon waterproof sealant bead around the antenna.

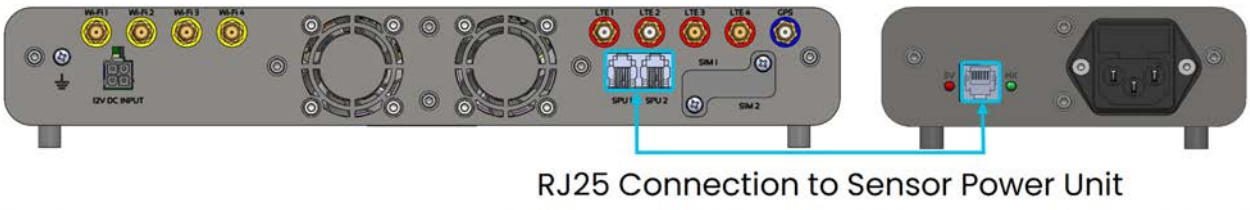
- Using the color codes and labels, connect leads (9 cables from antenna) to the Nexus Omni.

Terminate Power Runs to SPU

- Confirm the SPU is unplugged and the switch on the rear (master power) and green toggles on the front are in the OFF position
- Terminate Sensor power cables to SPU terminals.
- Typical cable coloring: Line = black, Neutral = white, Ground = green
- NOTE: If you need to release the power cable, press-down on GREEN connectors with a small flathead screwdriver and pull on the power cable.

Power Nexus Omni and SPU

- Connect the proprietary RJ25 Nexus-to-SPU data cable from the back side of the Nexus Omni to the backside port of the SPU



- Plug in the power supplies for the Nexus Omni (12 Vdc) and SPU (120 Vac) to a non-GFCI 120 Vac Outlet with the supplied power cord.
- Note: If using the SPU, use the Y-cable supplied with the SPU.
- Once plugged in, the Nexus Omni with automatically power on and begin boot up and establish an LTE connection
- Toggle the switch on the back of the SPU to ON but leave the front green toggles OFF

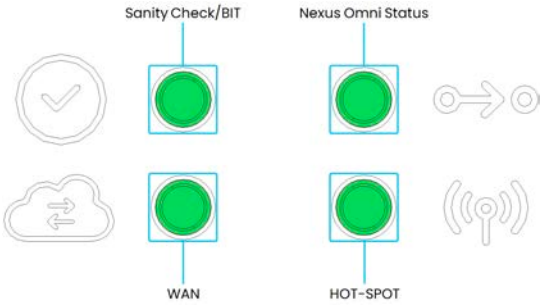
Install the Smart Harness

Smart Harness Selection:

- SDLC SH (Included)
- C1 Harness (Optional)
- ABC harness (Optional)

Smart Harness Installation:

⚠ WARNING: Do not attach the smart harness until after powering on the Nexus Omni and verifying an LTE modem connection. Ensure that the LED next to the cloud icon (WAN) is green.



- After powering up the Nexus Omni and after establishing an LTE connection, plug the smart harness into the Nexus and to SDLC.

I/O Cable	Where Used	Purpose
Smart Harness 	1. Nexus Omni to TSC or SDLC Bus	1. Enables communication between TSC and Nexus Omni for: • Reading TLS. • Placing detection calls.
SDLC 15-15 15-25 (BIU and SIU) 	1. TSC to SDLCSmart Harnesses to Nexus Omni	1. Enables communication between TSC and Nexus Omni for: • Reading TLS. • Placing detection calls.
	1. SDLC Smart Harness	1. Converts a DB15 male connector into a DB15 female connector.
C1 Smart Harness 	1. TSC to C1 Smart Harnesses to Nexus Omni	1. Enables communication between TSC and Nexus Omni for: • Reading TLS for Caltrans TEES software. • Placing detection calls.

- You should now have the Nexus Omni and SPU connected to power, Nexus Omni powered on, Sensor power cables connected, Smart Harness connected, and SPU toggle switches in the OFF position

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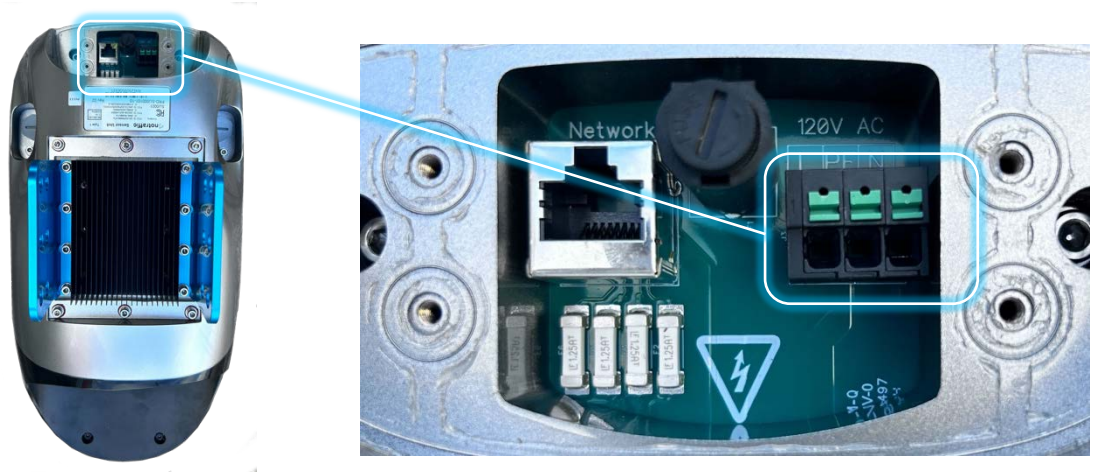
Sensor Installation and Aiming

Mount Sensors

- Hand tighten and install the 2 antennas on the Type-2 Sensor
- Install the Type-2 Sensor on the main road, closest to the cabinet.
- Attach all Sensors to the mounting bracket, right-side-up.

Connect Power

- Locate 2 wrenches in Sensor Type-2 box (located on box bottom)
- Tilt the Sensor down facing the road to better access the back wiring compartment.
- Remove the wiring compartment cover with a 2.5 mm Hex wrench.
- Feed a 3-connector power cable through the grommet and then the large hole on the cover.
- Terminate power to the Sensor leads: Line (L), Neutral (N), and Ground (PE).
- Terminals are either ORANGE lever connectors (no tools needed) or GREEN press-to-release connectors (small flathead needed).
- Re-attach the back compartment and hand tighten. Aiming done with Installation Assistant.



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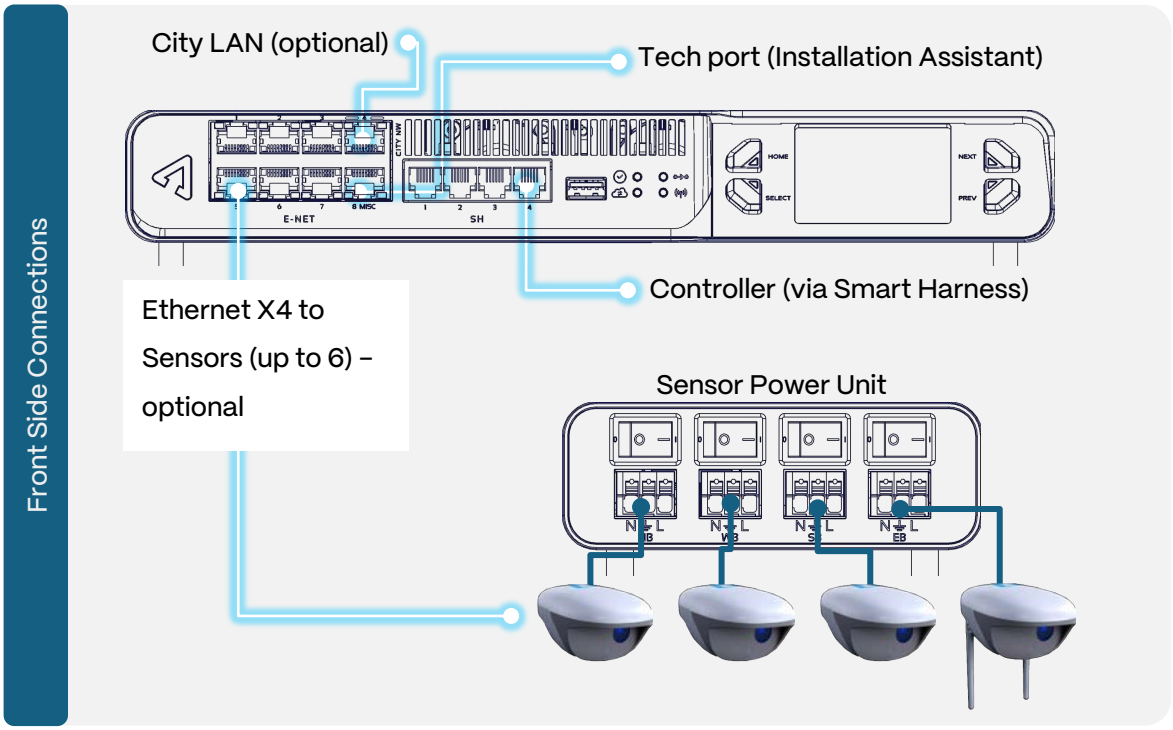
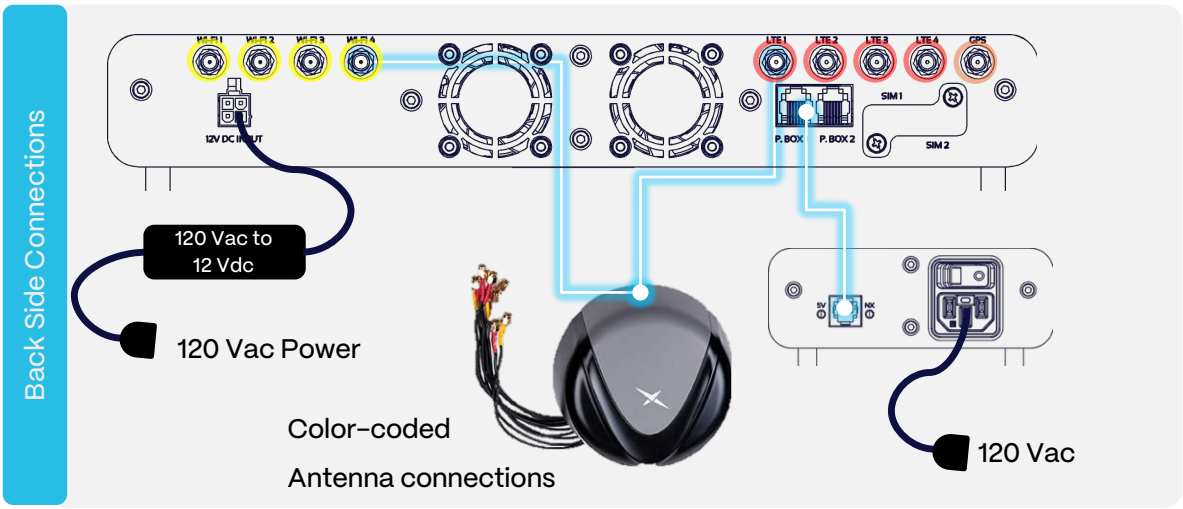
Installation Diagrams

Front Side Connections



Back Side Connections



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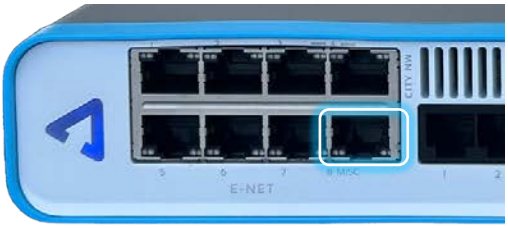
Installation Assistant

Once the Cabinet equipment is installed, you can open Intersection Manager (IM). Inside of IM, you can access Installation Assistant which will guide you through the rest of the installation.

Connect to Installation Assistant:

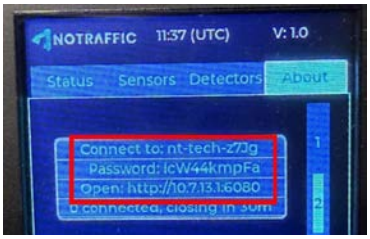
Method 1: Ethernet

- Connect a Cat 6 shielded Ethernet cable from a PC to the RJ45 MISC port on the front of the Nexus.
- On a laptop, Go to Network > Ethernet > DNS server assignment, set the option to Automatic (DHCP).
- Open a Chrome browser and type in: http://10.5.0.2:6080/
- Login: admin
- Password: notraffic2017

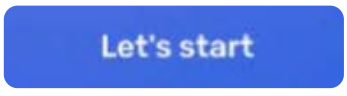


Method 2: Wireless

- Press NEXT to move to 'About' menu.
- Press SELECT 2x to move to Option 2.
- Press NEXT to enable Wi-Fi access.
- On a PC, enter the URL in a browser to open Intersection Assistant
- Wi-Fi will remain open for 60 minutes



Once connected, click 'Let's start' to get started



Installation Assistant Menu

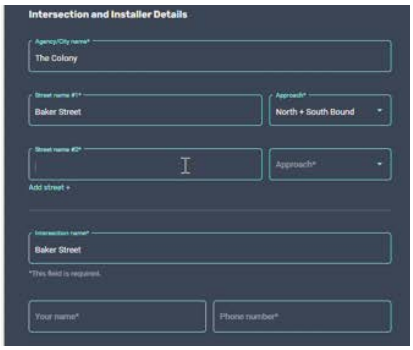
Once inside Installation Assistant, you will see the following icons for each section of the installation process. The Assistant is a step by step, guided procedure.

⚠ NOTE: This guide serves as a general overview only. If you need extra assistance, click on the lower left to display the user manual.

Input Intersection General Information

Input the following Intersection Information:

- Agency Name (end username in Mobility OS)
- Street 1 Name & Direction(s)
- Street 2 Name & Direction(s)
- Intersection Name overwrite (not required)
- Installer Name & Contact



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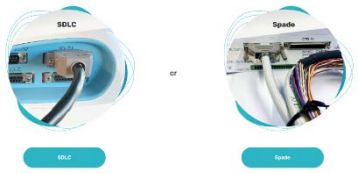
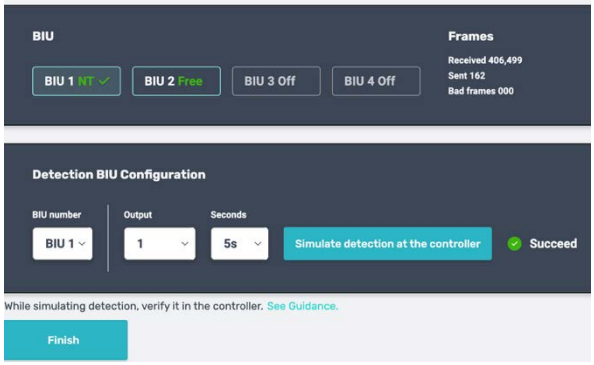
Configure Detection (SDLC)

Select the detection interface (commonly SDLC)



Set up Detection (SDLC)



- Select a BIU labelled 'Free'
- Output auto-generated
- Seconds: Use 5s for default
- Click 'Simulate detection'
- After successful test, BIU reads "NT"

Note: Only 1 detector needs to be simulated, any free BIU can then be used.

Configure Traffic Light Status

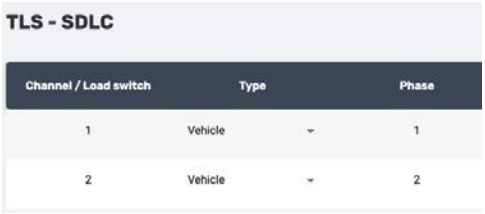
Select the TLS method (NTCIP, SDLC, or Spade)

NTCIP:

- Controller's IP: found in controller
- Controller port: NTCIP or SNMP port number
- Community name: 'public'
- NoTraffic IP: same network as controller e.g.: Controller 10.5.0.25 = NoTraffic: 10.5.0.24
- Click 'Save and Test Connection' and then 'Next'

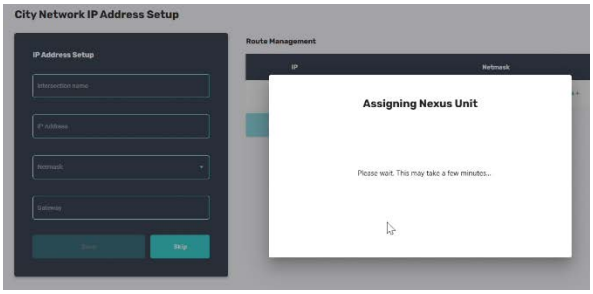
SDLC:

- Assign each channel in the cabinet to its corresponding vehicle, pedestrian, or Flashing Yellow Arrow
- Click 'Save Configuration' and then 'Next'



Configure City Network (Optional) & Assign Nexus

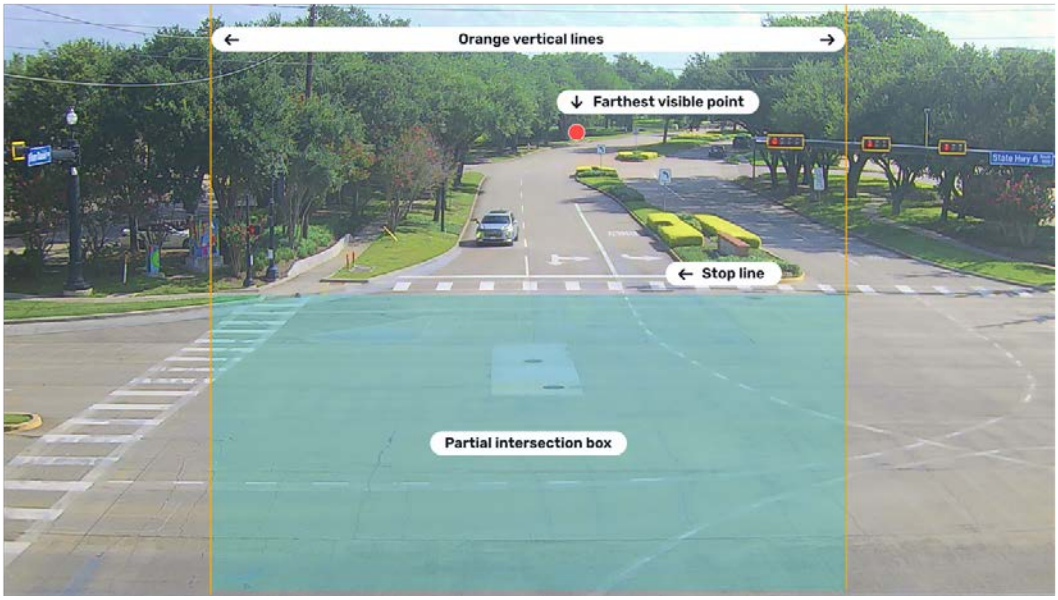
- If NOT connected to the City WAN Select 'Skip' to bypass this step and assign the Nexus
- If connected to the City WAN, input the assigned IP address, Netmask, and Gateway
- Select Save to assign the Nexus



Configure Sensors – Overview

The sensors are then aimed and configured in Installation Assistant

Aim the Sensors



- NOTE: Click ‘Guidance’ if you need more information on aiming the Sensors
- Ensure stop line and intersection box are centered between the two orange vertical lines.
- Maximize red dot placement down the approach keeping stop line / intersection box in position.
- Zoom in until the stop line is fully positioned between the two orange vertical lines and is large enough to be clearly visible. Check for the following:
  - Departure zone is visible.
  - Far end of the approach is visible.
  - Right and left turn trajectories remain partially visible.
  - All required detection zones (stop line, crosswalk, departure) are visible.
  - Each Sensor captures approximately half of the intersection box
- NOTE: When balancing zoom and framing, prioritize stop line and feature coverage over zoom.
- Adjust focus as needed.
- NOTE: For Pedestrian protection, ensure entire crosswalk is visible between orange lines.
- Lock the unit and make sure it hasn't moved while it was locked

NOTE: For curved approaches:

- Adjust sensor direction to follow the road’s bend while keeping the stop line clearly framed.

- Fine-tune the red dot to follow the lane curvature, making sure vehicles approaching the stop line stay visible and covered within the orange lines.

Update Sensor Information

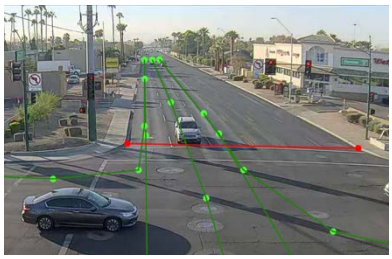
- Select the sensor, name the approach, aim, and lock down following the instructions
- Click 'Save' to save changes and advance to Calibration
- Note: Depending on installation workflow, you can select 'Intersection view' to finish aiming all sensors before proceeding

Calibrate Sensors

- Click on 'Guidance' for information on calibration
- Place the 3 cars using the keys identified
- NOTE: You can double click to quickly place the car in an approximate area
- Place vehicles: near the stop line; midway; and close to the horizon, spreading across lanes

Add Stop Line and Trajectories

- Draw the stop line across the stop bar
- Draw trajectories for all possible movements
- Select the lane (i.e., If there is a left and thru in the same lane, they will both be lane 1)



Assign phases to lanes

- Click on the bubble of each lane to assign its phase.

Add Detection Zones

- Select the approach
- Draw a box for your detection zone
- Assign a name, vehicle type, output type, and output number

Assign Sensors

- Once all steps are complete, you can assign the Sensor
- Assign one Sensor at a time
- Ensure that they are properly named and configured
- Allow 2–5 minutes per sensor

Run System Tests

The system tests screen guides you through a list of verifications to before to confirm a successful installation.

- Click Run Test
- After achieving 'Passed' status for each text, click Request registration
- Call support for any persistent issues

Register with NoTraffic

Verify your information on the summary screen

- Check the box next to 'Register Intersection' and press 'Register Intersection'
- You will see a Congrats! Screen
- Installation Assistant setup is complete

Confirm a Successful Installation

- Verify that all Sensors are working properly on Installation Assistant
- Check that calls are being sent from the Nexus to the Controller
- Check your site on Mobility OS to verify creation
- Our NOC team will also conduct a series of checks and confirmations over the next few days to ensure proper operation