HME®
HOSPITALITY & SPECIALTY COMMUNICATIONS

ZOOM Nitro®
Vision AI

INSTALLATION GUIDE

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IMPORTANT SAFETY INFORMATION, PLEASE READ FIRST

Safety Notice



CAUTION: Wear eye, hearing, and body protection when grinding, drilling, or working with tools. Follow the manufacturer's safety information and operational instructions for tools and materials.

Please be careful and comply with all safety protocols and warnings!

Failure to heed such precautions can cause property damage, injury, or death.

Hygiene, Health, and Safety

Part of this installation requires working within a restaurant/store where food is prepared and customers dine. Please consult the restaurant/store manager, standard operating procedures, and any additional restaurant safety/advisory protocols available before beginning work within the restaurant/store. Follow the instructions and guidelines provided.

Battery Disposal



HME cares about the environment. If this product uses batteries, please consult the laws and regulations within your municipality regarding the proper disposal of expired or damaged batteries.

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INTRODUCTION

Inventory the parts shipped to the site and compare them to the packing slip included in the box. Notify HME Support IMMEDIATELY if any equipment is missing or damaged during shipment.

WHAT'S IN THE BOX

- Video Processing Unit (VPU) with power adapter
- PoE Switch with power adapter
- Camera(s)
- Cables
- Junction Boxes (used for cable routing and camera mounting)
- ZOOM Nitro System (if a new site having a complete system installed)

> ***NOTE:*** Box contents and quantities may vary depending on the sales order.

TOOLS, EQUIPMENT, AND MATERIALS NEEDED

- Standard Hand tools:
  - #1, 2, and 3 Phillips-head screwdrivers
  - 1/4-, 3/16-, and 5/16-inch slotted/flat-blade screwdrivers
  - Phillips- and flat-blade "tweaker" screwdriver set
  - Pliers
  - Diagonal Cutters
  - Wire strippers
  - Utility knife
  - 25' Tape Measure
  - 8" Torpedo Level
  - Torx/Allen Wrench (the Torx wrench is included with the Camera hardware kit for adjusting camera angle and rotation, while the junction box hardware includes an Allen wrench)
- Cat6 cable tester
- Wire Tracer/Toner
- SDS rotary Hammer Drill 3/8" 18/20V cordless with spare battery or corded (recommended for masonry work).
- Masonry drill bit set including 3/4" diameter 18" long masonry bit for wall penetration (required to pass the RJ45 connector of the Ethernet cable through).
- Fish sticks/fish tape ("green" sticks) for routing/pulling cables
- Ladder (10 ft minimum or taller, as nominal camera installation height is 12 to 14 feet).
- Digital Camera (Smartphone camera will suffice)
- Cell Phone
- Safety Glasses

Materials

- Cable ties, including screw-mount/mounting-hole cable ties.
- Hardware/Fastener Assortment.
- Electrical tape, twist caps, sleeving, or conduit.
- Waterproof sealant or equivalent for sealing the Ethernet cable entry point.

SYSTEM OVERVIEW

Install and bring the ZOOM Nitro Vision AI system to a fully functional state. Nitro Vision AI consists of multiple IP cameras (depending on site requirements), one VPU, and one PoE switch connected to a ZOOM Nitro system and through the store's network switch.

While there are numerous site floor plans and structural differences, the installation is essentially the same for all stores. Sites are first surveyed and approved before installation. If previously unidentified physical restrictions are discovered during installation, escalate the issue immediately to HME Support.

Camera Placement in Drive-Thru Lanes and Mobile spaces

Cameras are used to detect and track vehicles in a drive-thru or in a mobile space. Fig. 1.7 shows an example of multiple possible locations.

Drive-Thru

In this setting, cameras are positioned to capture multiple zones as defined here.

Extended Stack: (The teal area in Fig. 1.8) This is an area behind the pre-menu stack that extends it.
Pre-Menu Stack: (The red area in Fig. 1.8) This is an area behind the pre-menu where customers can potentially exit the lane and drive off if they decide not to wait.
Pre-Menu: (The orange area in Fig. 1.8) This is the area where a single car next in line is waiting just before reaching the order point.

When installing cameras in a drive-thru, consideration must be given to the drive-thru layout. It will either have a captured or an uncaptured lane.

Captured lanes: These lanes have a physical boundary along their length, preventing cars from pulling out and driving off. These boundaries can be curbs, walls, railings, or hedging. (Fig. 1.1 has curbs). Captured lanes are also narrow enough so that a car cannot overtake the car in front of it. The only way a car can escape a captured lane is by reversing out of it.

Pre-Menu Stack: In a captured lane, Pre-Menu Stack begins at the end of the Pre-Menu and extends back to capture a line of cars, sometimes a few cars deep.
Pre-Menu: In a captured lane, Pre-Menu begins at the start of the captured lane just before the order point and extends back, ideally one car length before the order point.

Uncaptured lanes: These lanes lack a physical boundary or are wide enough for cars to pull out of a queue and drive off at any point in the drive-thru.

Pre-Menu Stack: In an uncaptured lane, Pre-Menu Stack begins at the end of the Pre-Menu and extends back to capture a line of cars, sometimes a few cars deep, to a point where proper detection becomes unreliable or traffic for the drive-thru is no longer discernible.
Pre-Menu: In an uncaptured lane, ideally, Pre-Menu is as close to the order point (but before it) as possible. It must also be one car length long (approx. 20 ft (6.1 m)).

Pick-Up Zones

These are the Blue and Purple areas in Fig. 1.7. Cameras should be installed to see as many mobile or pull-forward spaces as possible, up to four mobile spaces per camera (eight with two cameras), up to two pull-forward spaces (two maximum), or a combination of both. Cameras should be positioned to view the front or back of these pick-up zones, as side views can be problematic due to obstructions. For example, a tall vehicle may block the camera's view of a detection zone if the zone is far from the camera and other parking spaces lie between them.

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Overview of Possible Camera Placement Locations

These locations are also illustrated in Fig. 1.7 and 1.8.

- Extended Stack: This is an area behind the Pre-Menu Stack that extends the queue beyond it.
- Pre-Menu Stack: This is an area behind the Pre-Menu where customers can potentially exit the lane and drive off if they decide not to wait.
- Pre-Menu: This is the area where a single car next in line is waiting just before reaching the menu board.
- Menu: This is the area where a customer (single car) places an order.
- Cashier and Service: These are the areas where customers pay for and receive their orders. These are sometimes a combined single window.

Mobile/Pull Forward spaces

For these spaces, cameras should be positioned to view the front or back of the targeted spaces. The system supports up to two Pull Forward spaces. One Camera can capture up to four Mobile spaces as shown in Fig. 1.1.

- Pull Forward space: These are areas off the drive-thru where customers await their order.
- Mobile space: These are parking stall areas where customers await their mobile order.

General rules for Zones and Camera Placement

1. The upper (far) edge of the zone should follow the far edge of the lane (blue line in Fig. 1.1 and Fig. 1.4). This rule takes precedence over Rule 2.
2. The lower (near) edge of the zone should be extended by 30% past the close edge of the lane (red line in Fig. 1.1 and Fig. 1.4). The buffer should not extend into areas where other cars drive or park. In such a case, do not include buffer space.
3. Where the Pre-Menu and Pre-Menu Stack meet, there must be no gaps or obstructions.
4. The Pre-Menu and Pre-Menu Stack must be drawn so that cars pass through both zones.
5. The Pre-Menu length must be long enough to fit a regular-sized car.
6. The Pre-Menu Stack length must be as long as possible to capture as many cars in the queue as possible, without capturing areas where cars could park or other traffic lanes.
7. For mobile spaces and pull forward spaces, positioning the camera toward the front or back of the space is preferable, as side views may be blocked by other large vehicles in adjacent spaces.
8. To ensure proper detection and data integrity, position the detection point no closer than 6 ft (1.83 m) and no farther than 60 ft (18.3 m) from the camera.

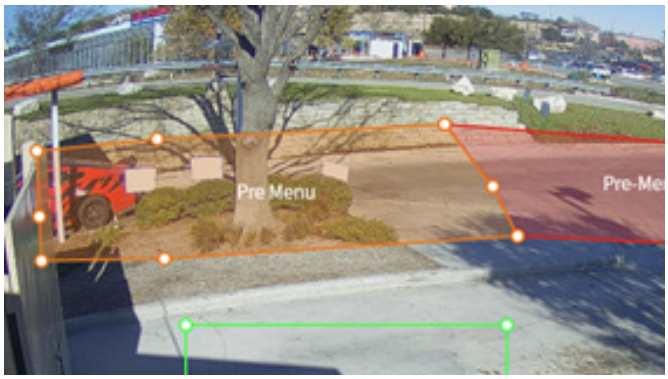
Fig. 1.1 shows a drive-thru lane with the upper edge of the zone in blue and the lower edge in red.



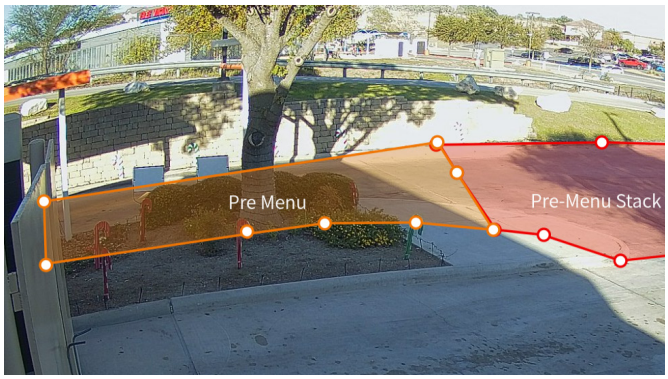
Fig. 1.1

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Fig. 1.2 shows a poor example of a drawn zone. Rule 1 is broken as the zones are drawn beyond where the upper boundary was drawn (the blue line in Fig. 1.1).
Fig. 1.3 is drawn correctly. The upper zone boundary follows the edge of the drive-thru while the lower boundary extends past the lower edge of the drive-thru (the red line drawn in Fig. 1.1). This fulfills rule 2 because the 30% buffer is included. Rules 3–6 are also met.



Poor Example: Fig. 1.2



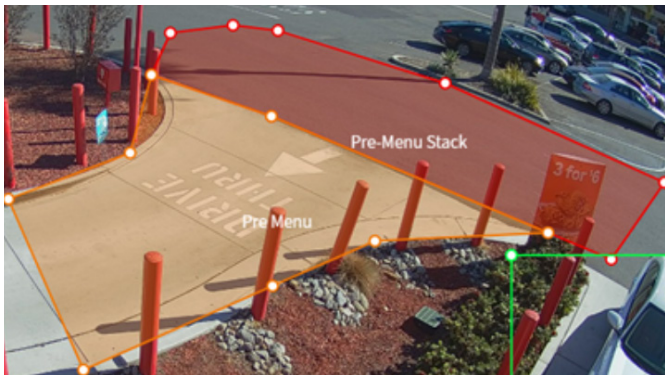
Good Example: Fig. 1.3

Fig. 1.4 shows another example with the upper edge of the zone in blue and the lower edge in red.

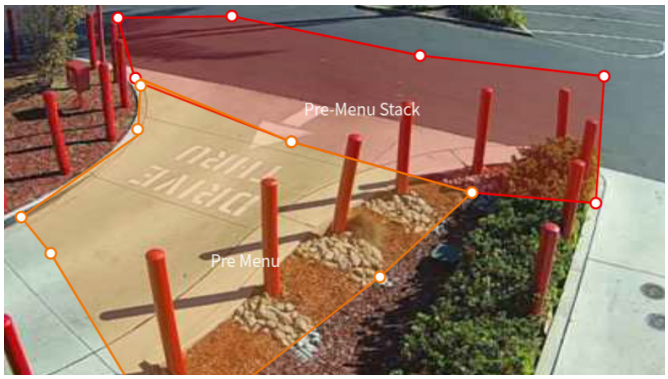


Fig. 1.4

Fig. 1.5 shows a poor example of a drawn zone. Rule 2 is broken.
Fig. 1.6 is drawn correctly. The upper zone boundary follows the edge of the drive-thru while the lower boundary extends past the lower edge of the drive-thru (the red line drawn in Fig. 1.4). This fulfills rule 2 because the 30% buffer is included. Rules 3 - 6 are also met.



Poor Example: Fig. 1.5



Good Example: Fig. 1.6

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In Fig. 1.7, six cameras are positioned to capture these zones: Extended Stack, Pre-Menu Stack, Pre-Menu, Menu, Cashier, Service, Pull Forward space, and Mobile space.

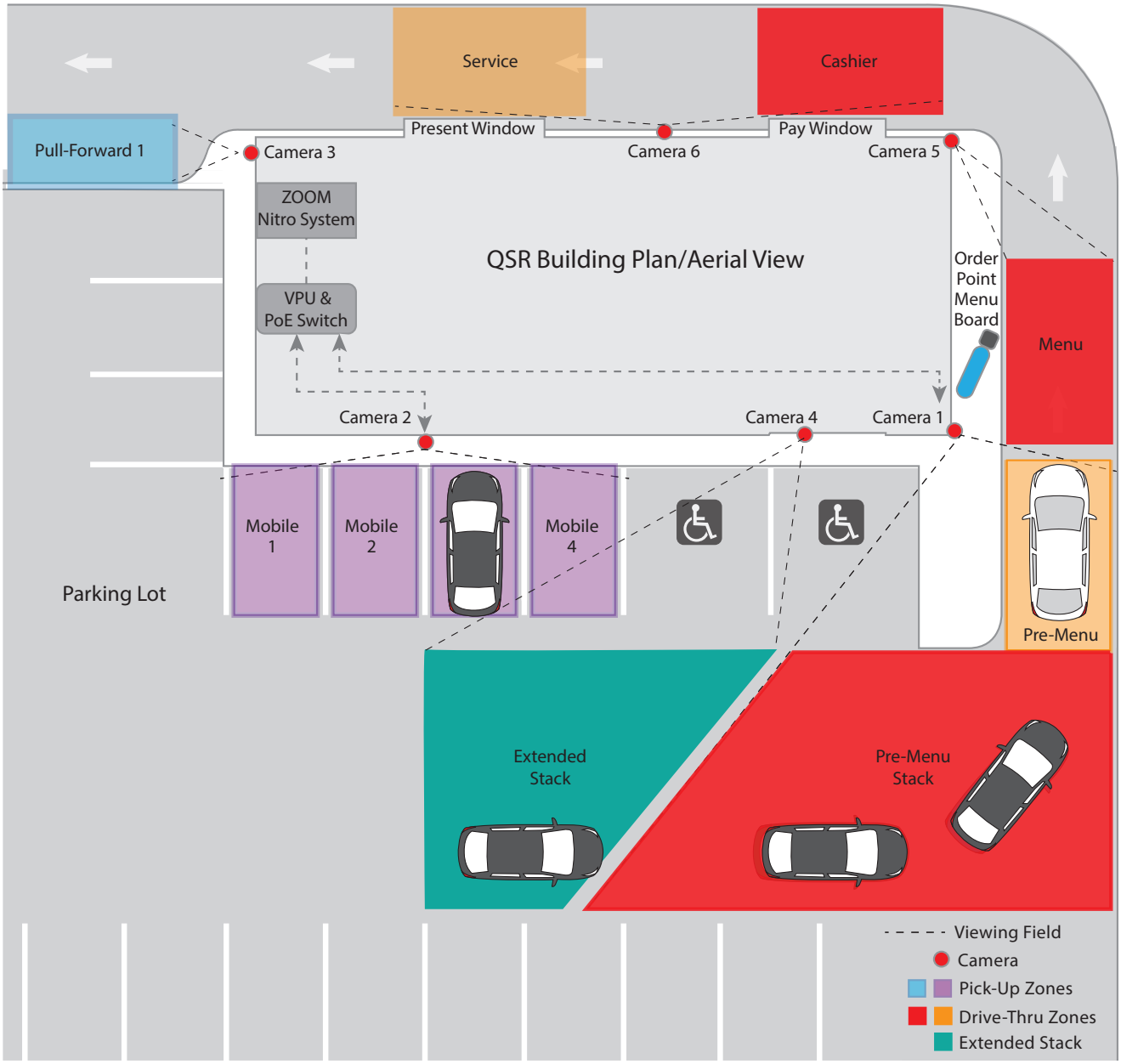


Fig. 1.7

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In Fig. 1.8, four cameras are positioned to capture these zones: Extended Stack, Pre-Menu Stack, Pre-Menu, Pull Forward, and Mobile spaces. Menu and Service Window therefore use ground loops to detect vehicles in these zones without cameras.

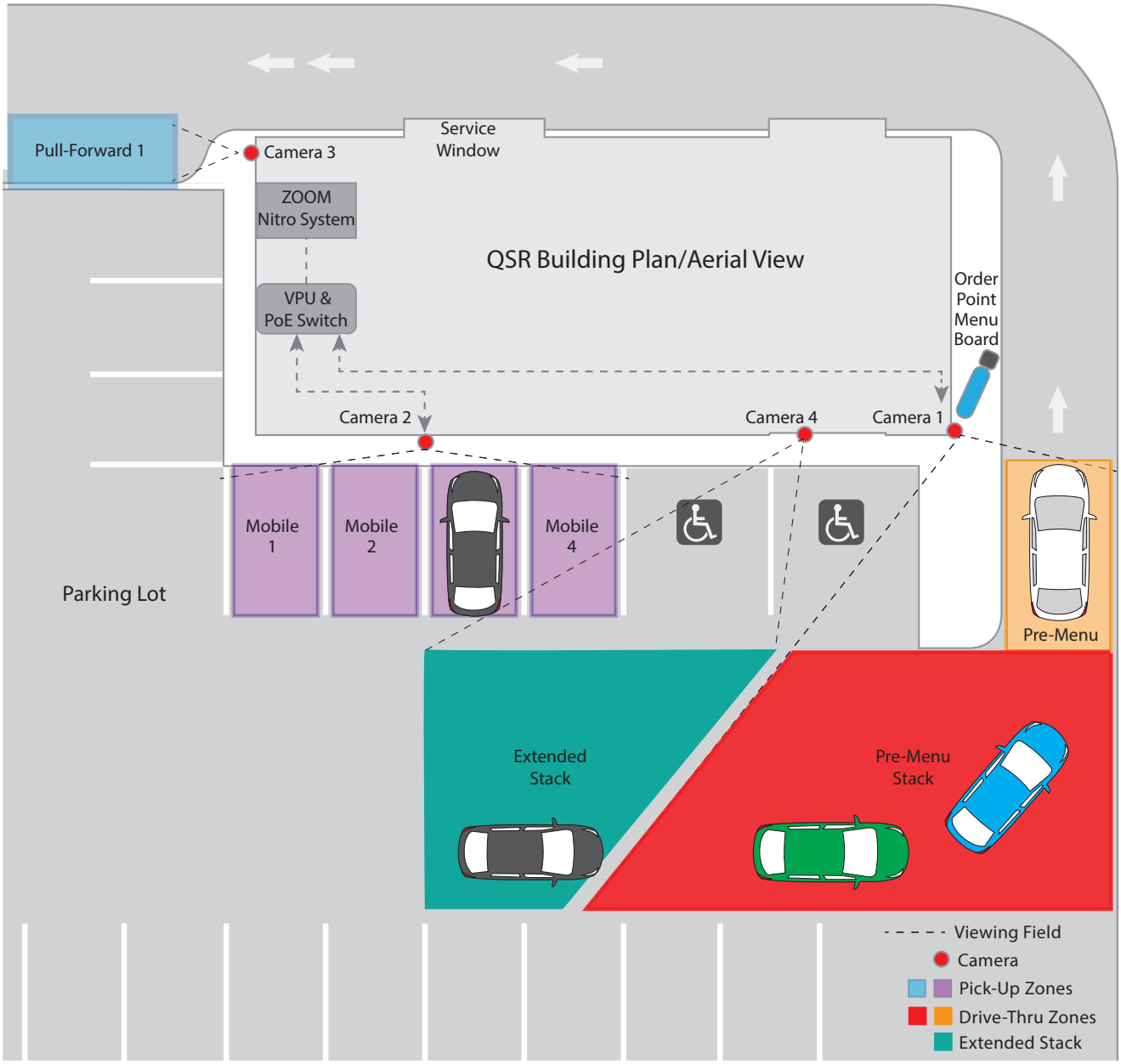
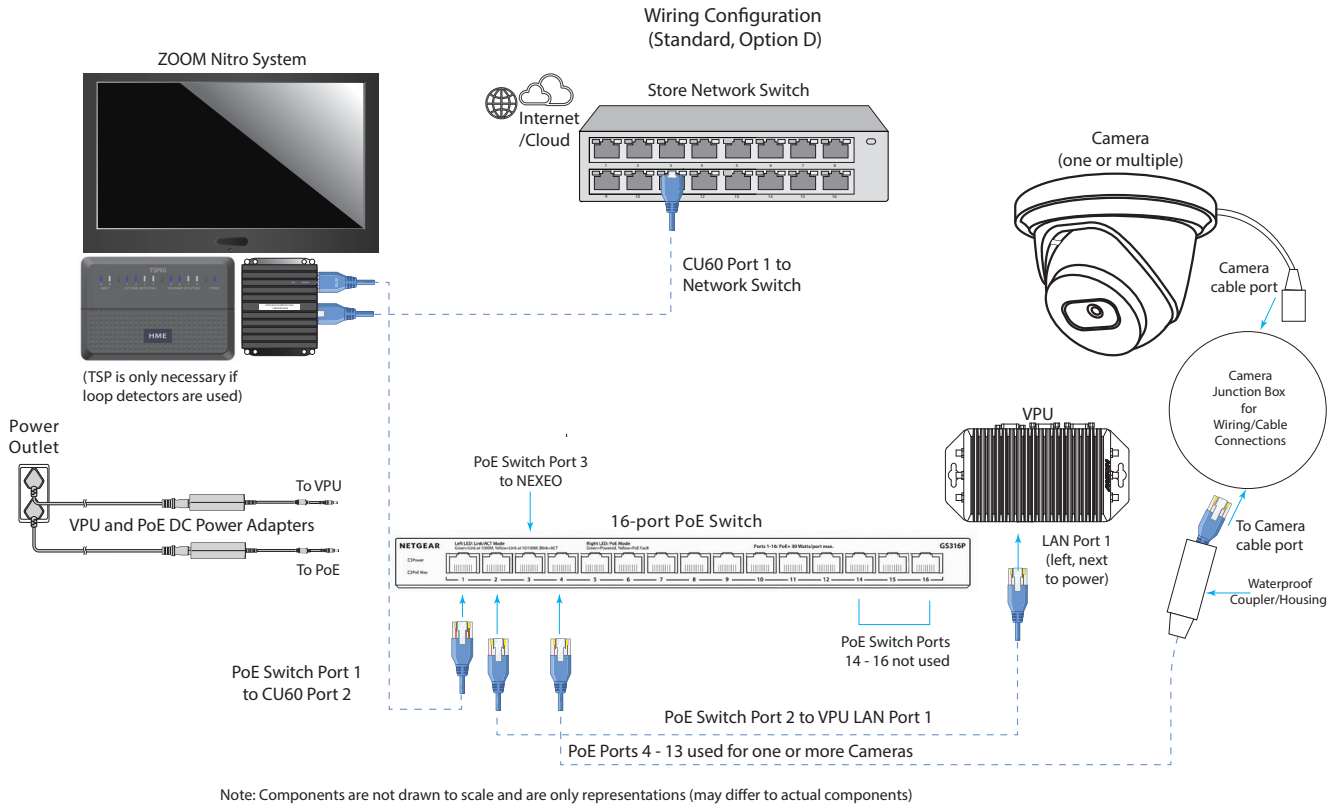


Fig. 1.8

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SYSTEM WIRING DIAGRAM



Note: Components are not drawn to scale and are only representations (may differ to actual components)

Fig. 2.1

INSTALLATION

BEFORE YOU BEGIN

- Follow all applicable municipal building codes during installation.
- Refer to the work order for approximate camera locations, zones, and other pertinent information.
- Use a cable tester to verify the Ethernet cable before running it.

RUNNING CABLES

Observe the following precautions when running cables.

- Determine the cable routing path between the CU60, monitor, VPU, PoE switch, and camera locations.
- Verify device proximity to vacant power outlets and the store's network switch.
- Create a service loop when running the camera Ethernet cable.
- Support cables properly (do not leave them resting on ceiling tiles, exposed, or coiled on walls).
- Seal the cable penetration point after pulling the cable. Use an exterior waterproof sealant.
- Verify that the camera Ethernet cable has the waterproof coupler installed.

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INSTALL THE BASIC ZOOM NITRO SYSTEM

> **NOTE**: If a ZOOM Nitro system is already installed, skip this section and proceed to "Install the Camera" on page 13.

1. Survey the premises with the store manager to determine the optimal mounting location for the ZOOM Nitro system. Consider the following:
   - User accessibility
   - Appropriate space for mounting all system components
   - Proximity to a power outlet
   - Required cable lengths between devices
   - Clearance from electrical and plumbing obstructions when drilling
   - Mount the system high enough on the wall to be out of the way while still visible/accessible.

2. Remove (if attached) and discard the monitor base stand (see Fig. 3.1).

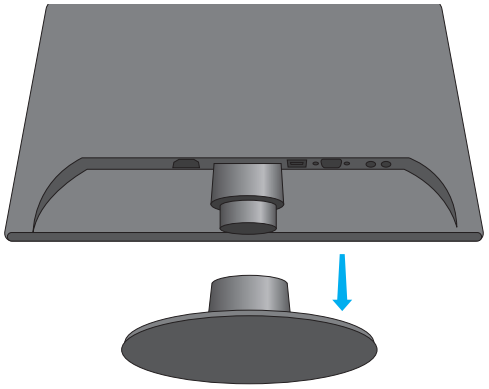


Fig. 3.1

3. Mount the monitor bracket to the wall. To do this, select an appropriate location, preferably on a wall stud if the wall has wood-stud construction.
   - Hold the wall plate level against the wall and mark the wall through the two mounting holes.
   - Drill holes at the marked locations.
   - Mount the bracket to the wall using the required hardware (screws, wall anchors, or toggle bolts if necessary); see Fig. 3.2.

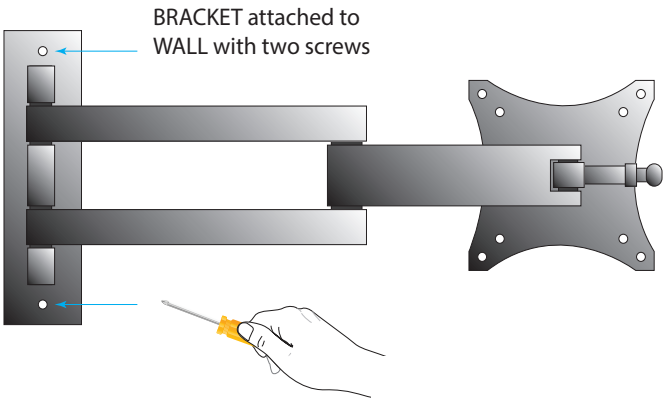


Fig. 3.2

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4. Attach the monitor to the faceplate with the provided hardware (see Fig. 3.3).

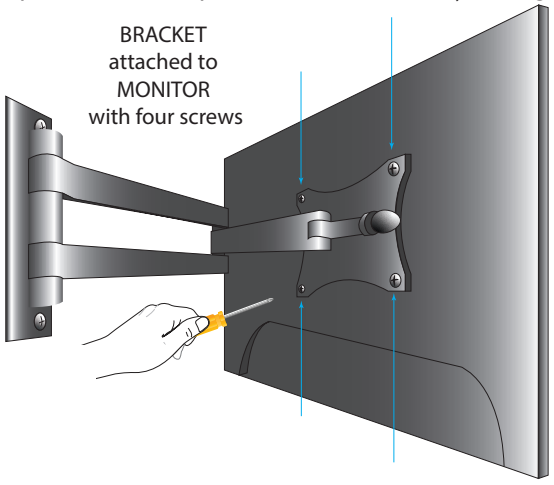


Fig. 3.3

5. Attach the CU to the CU wall plate using the provided hardware (see Fig. 3.4).

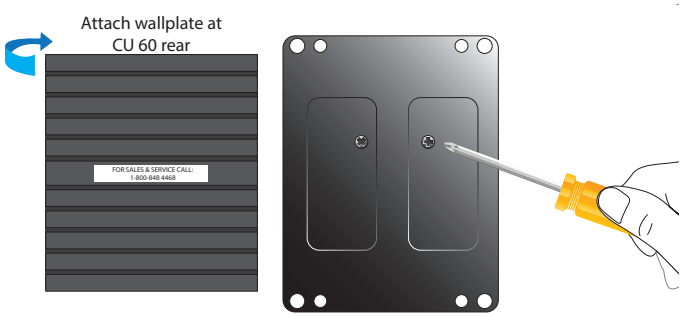


Fig. 3.4

6. Mount the CU on the wall.
   - Hold the CU with wall plate against the wall, and mark the wall through the four outer mounting holes.
   - Drill holes at the marked locations.
   - Mount the CU to the wall using the necessary hardware (screws and wall anchors, if necessary); see Fig. 3.5. NOTE: The HME Sales and Service sticker should face upright.

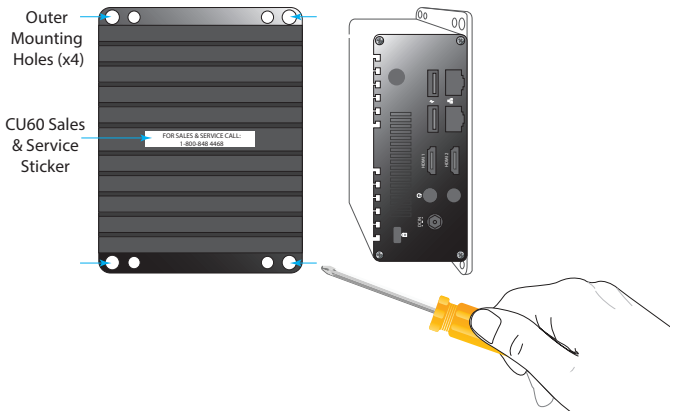


Fig. 3.5

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7. Connect the cables (reference Fig. 3.6 for each step):
   1. Connect the network cable to the network port. Verify that the opposite end is connected to the network switch.
   2. Connect a mouse (and a keyboard, if desired) to a USB port.
   3. Connect the HDMI cable for the primary monitor to the port labeled HDMI 1.
   4. Connect the power adapter.

   NOTE: HDMI 2 is for a Drive-Thru Leaderboard display (optional).

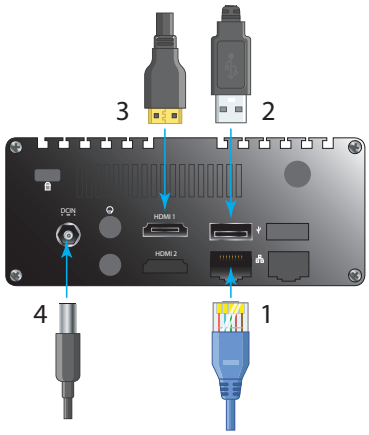


Fig. 3.6

8. Connect the power cable and the HDMI cable to the monitor (see Fig. 3.7). Connect the other end of the power cable to an electrical outlet.

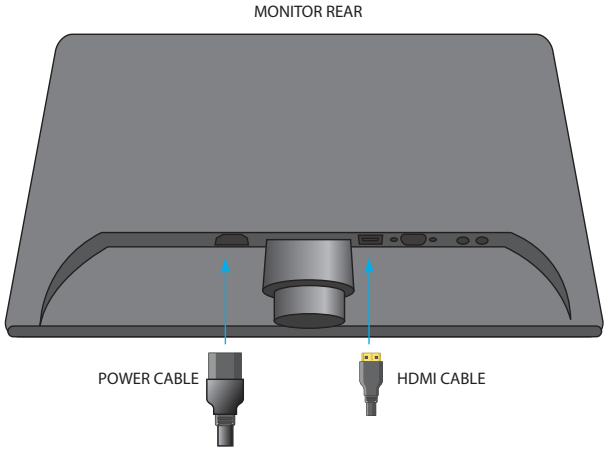


Fig. 3.7

NOTE: The following steps are only required when loop detectors are used, which also requires a TSP60. If you are only using cameras, then skip to step 15

9. If you are also using a TSP60 (only required if using ground loops), mount it using the three mounting keyholes at the rear of the unit. The two lower keyholes can be accessed by opening the lower front cover of the housing. The latch is magnetic. Use the finger tabs on both sides and pull back from the housing to open it (see Fig. 3.8).
   - Use the TSP Template image on the last page of this guide to punch through and mark all three

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mounting keyholes on the wall (the top hole cannot be accessed through the TSP housing).

- Drill three holes at the marked locations.
- Install the provided hardware (screws and wall anchors if necessary) but do not tighten the screws. Leave a gap of approximately 1/8 in. (3.2 mm) between screw heads and wall.

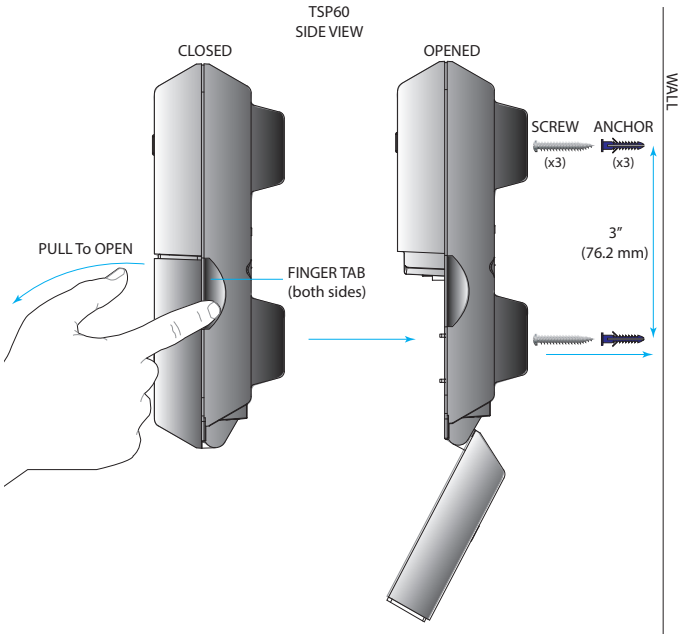


Fig. 3.8

- Align the keyholes to the screw heads.
- Mount the TSP60 over all three screw heads until flush against the wall, then slide down onto the screw shanks to secure it in place.

10. Route and terminate component cables to the TSP60 through the opening on the rear housing. Refer to the "TSP60 wiring connections" on page 46 while following these next few steps.

11. Connecting Loop Detectors:
    After the Base Station has been connected to the TSP, connect the first loop detector cable to the LOOP1 connector (J4) of the TSP using red and black wires. These may be connected in any order (see Fig. 2.4). Any additional loops beyond the menu point, such as a service window can be connected to LOOP2, LOOP3, or LOOP4 connectors (J5, J6, and J7), respectively.
    NOTE: Activation is required to use LOOP2–LOOP4.

12. When connecting a NEXEO® base station:
    Connect the green and white wires from J800-1 and J800-2 on the base station to the Greet1 terminals J1-1 and J1-2 on the TSP (see Fig. 3.9). For polarized terminals, always connect positive (+ve) to positive (+ve) and negative (-ve) to negative (-ve).
    Connect the shield wire to ground (pin 5 on J800 & J1).
    Connect the remaining red wire from J800-7 to J2-1 and black wire from J800-6 to J2-2 (or any of the available detector inputs).
    For stores with an additional menu point (e.g., a Y Lane), repeat this step using J801 on the Base Station to Greet2 and another detector input on the TSP.

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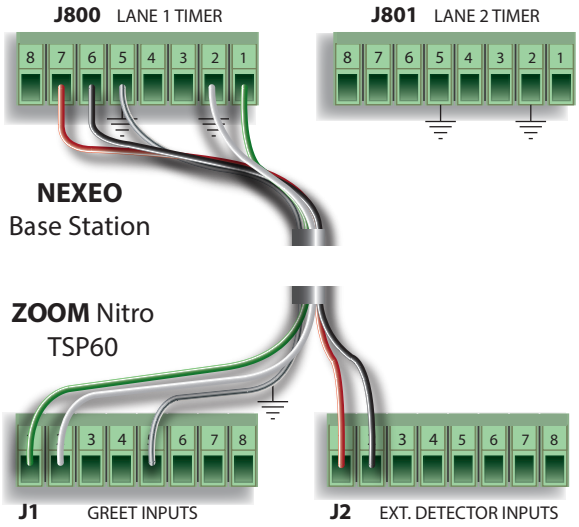


Fig. 3.9

13. Connecting the USB cable:
    Connect the USB Type-B connector end to the TSP60.
    Connect the other end to the black (bottom) USB port on the front panel of the CU60.
    The TSP60 turns on automatically when the CU60 is powered on (see Fig. 3.10).

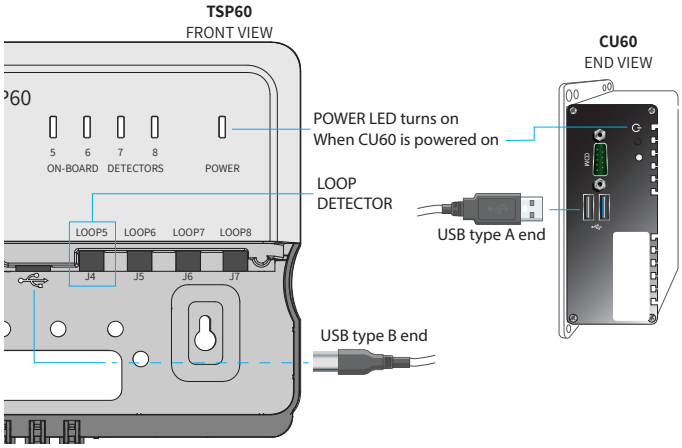


Fig. 3.10

14. Use cable ties and the strain-relief holes on the rear of the TSP60 housing to bundle and provide strain relief for cables exiting the unit.
15. Power on the CU60 and the monitor.
16. The Nitro Vision AI user interface appears on the monitor:
    - When the system first boots up, the Installation Wizard screen appears (see Fig. 3.11).
    - The Installation Wizard guides you through several screens. Fill in the required information to progress to the next screen. For example, on the second screen, you must scroll through and read the EULA page and click Agree to advance to the next screen. When you reach the Network Settings screen, enable DHCP to auto-populate the fields. Then populate the fields under Registration, Store Settings, and HME CLOUD Info. Finally, a Congratulations prompt completes the Installation Wizard; click Done to exit. The dashboard now appears.

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- Click the menu icon in the dashboard's upper-left corner, choose SECURITY, and log in as the Installer.
- NOTE: The United States is the default country but if the installation is in another country, the country must be manually selected from the drop-down list under STORE SETTINGS.

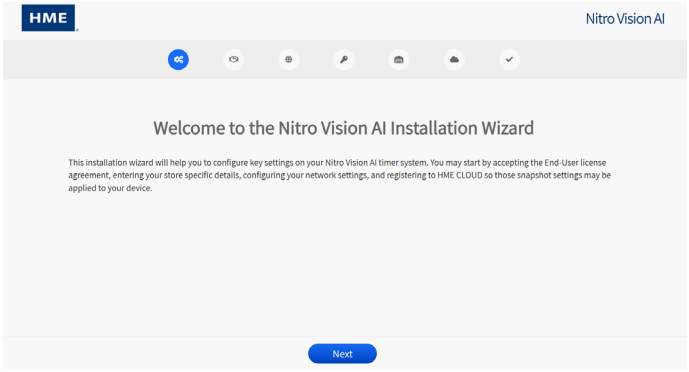


Fig. 3.11

17. Your system is now ready for use.
    - Refer to the ZOOM Nitro Vision AI User's Guide for details on how to use the system if necessary.
    - If there are any installation issues, call HME Technical Support at 1.800.848.4468.
18. Proceed to next section, installing the camera.

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Install the Camera

Install the junction box and the camera:





1. Refer to the installation work order for the suggested camera placement.
   NOTE: Before installation, ensure the mounting surface can support at least three times the camera's weight. If you are using an approved camera other than the Amcrest model used in this example, refer to the OEM installation guide for any instructions that differ from those provided here.
2. Remove the contents of the accessory box containing the junction box hardware.
3. Peel and place the junction box mounting sticker onto the mounting surface where the junction box will be mounted. See Fig. 3.12.

> ***NOTE:*** The ideal mounting height is 12 to 14 ft (3.7 to 4.3 m). To ensure proper detection and data integrity, position the detection point no closer than 6 ft (1.83 m) and no farther than 60 ft (18.3 m) from the camera.

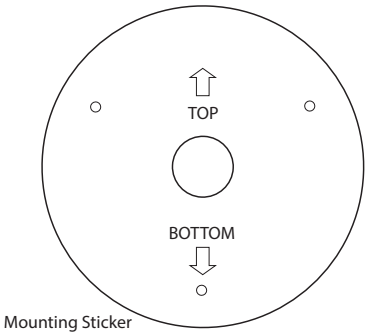


Fig. 3.12

4. Drill holes according to the mounting sticker. If routing cables through a wall or ceiling, use a 3/4 in. paddle bit or masonry bit to drill through the center of the mounting sticker.
5. Remove the lid from the junction box and use the included hardware. Insert the included wall anchors into the holes. Use a Phillips head screwdriver and screws to mount the junction box (Fig. 3.13).

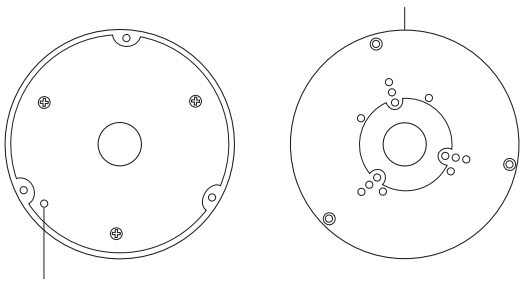


Fig. 3.13

6. Pass one end of the Ethernet cable through the wall opening just drilled (the majority of the cable

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should be inside the building, with just enough slack on the outside to make the camera connection and seal with the waterproof coupler). The Ethernet cable should pass through the mounted junction box and the lid you removed. Remove the black grommet at the center of the lid to do so; it will be reinserted later.



Fig. 3.14

7. Remove the camera and contents from the camera box.
8. Connect the included waterproof coupler to the Ethernet cable and camera cable as follows:

> ***NOTE:*** Most commercial Ethernet cables use a molded strain-relief boot that cannot be separated from the RJ45 connector; therefore, only use the outdoor cable provided.

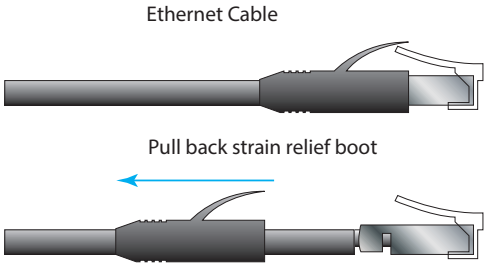


Fig. 3.15

9. Pull back the strain relief boot covering the RJ45 plug on the outdoor Ethernet cable.
10. Install the four-piece waterproof coupler that came with the camera. Three pieces (1, 2, and 3) are installed on the Ethernet cable, while the fourth piece, the thin washer (4), is inserted over the RJ45 port on the camera cable. See Fig. 3.16.

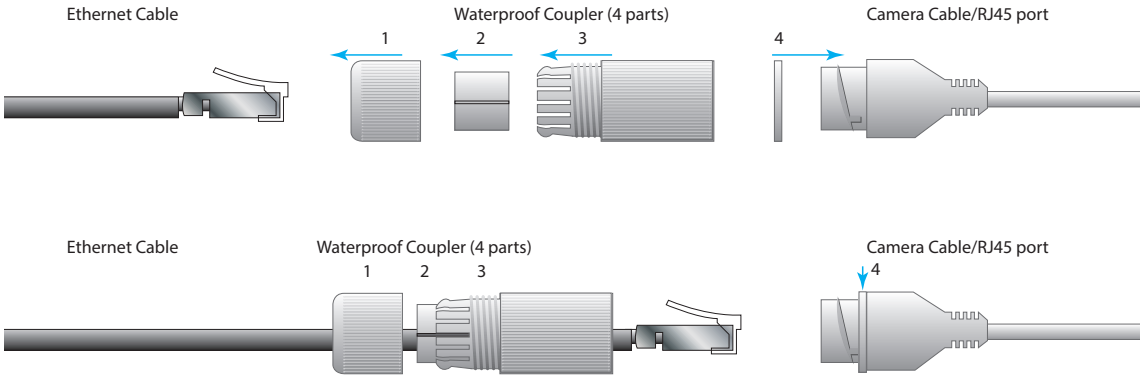


Fig. 3.16

11. Connect the Ethernet cable to the RJ45 port on the camera cable.

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12. Assemble the plastic waterproof coupler together to seal the connection. See Fig. 3.17 and Fig. 3.18.

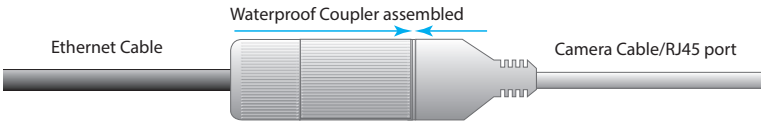


Fig. 3.17



Fig. 3.18

13. Once the cables are connected and sealed, coil them back into the junction box to conceal them.
14. Reattach the lid to the junction box using the included hex key.
15. Use the included Torx wrench (from the camera box) to remove the security screw on the front of the casing. See Fig. 3.19.



Fig. 3.19

16. This separates the camera assembly from its housing (Fig. 3.20).

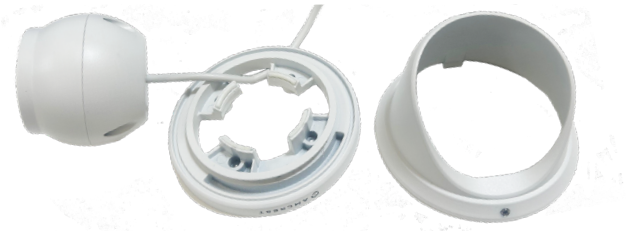


Fig. 3.20

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17. Align the four holes on the camera bottom bracket with the mounting holes on the junction box lid, and attach it using the socket-head cap screws and hex key from the junction box hardware bag. See Fig. 3.21 and Fig. 3.22.

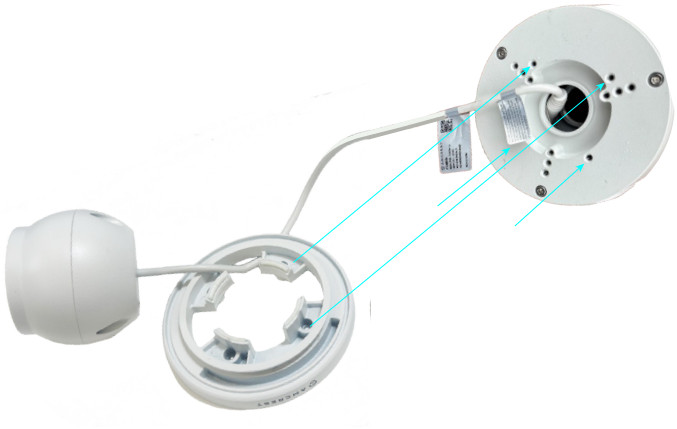


Fig. 3.21



Fig. 3.22

18. Feed any cable slack back into the junction box. Place the black grommet (removed in step 6) onto the Ethernet cable (the grommet is split and can be opened). Press the grommet back into the junction box lid to seal it.
19. Place the top portion of the housing over the camera and bottom bracket, then use the Torx wrench to reinstall and tighten the security screw. Do not overtighten the security screw, as it may not be properly secured. The camera is now securely mounted to the junction box.

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Install the PoE Switch



The PoE switch can be placed on a shelf or wall-mounted. To wall mount:

1. Place the template against the wall (see end of the guide for template).
2. Use a punch, pencil, or other pointed marker to punch through the cross-hairs on the template to mark the wall for the screw positions.
3. Drill holes and insert anchors and screws, but leave enough gap between the screw heads and wall so that the PoE switch can be mounted over the screw heads (approximate gap size: 0.125" (3.2 mm)).
4. Mount the PoE switch over the screw heads until flush against the wall, then slide it down onto the screw shanks to secure it in place.

Install the VPU



The VPU can be placed on a shelf or wall-mounted. To wall mount:

1. Hold the VPU against the wall and use a pencil or punch to mark the screw locations.
2. Drill holes and insert anchors and screws, but leave enough gap between the screw heads and wall so that the VPU can be mounted over the screw heads (approximate gap size: 0.125" (3.2 mm)).
3. Mount the VPU over the screw heads until flush against the wall, then slide it down onto the screw shanks to secure it in place.

Connect all System Components

Connect the Ethernet cables (see work order and Fig. 3.23 for details).

- PoE switch port 1 connects to the ZOOM Nitro CU60 port 2.
- PoE switch port 2 connects to the VPU port 1 (left LAN port next to power connector).
- PoE switch port 3 is used to connect the NEXEO system (optional).
- Connect the camera(s) to the remaining available ports on the PoE switch.
- Connect the power adapter, then power on the PoE switch with the cameras connected.
- Finally, connect and power on the VPU.

> ***NOTE:*** The PoE and VPU should not be mounted in the store's IT enclosure (system/network rack) unless a designated place has been allocated by the store's IT administrator. Such enclosures may not provide adequate cooling/ventilation for the VPU. Rack maintenance activities and the number of cables terminated in the enclosure can also affect connection integrity.

With the ZOOM Nitro Vision AI system connected and powered on, configure the system through the ZOOM Nitro dashboard. See the next section.

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Detailed Port Connections Diagram for 16-Port PoE Swtich

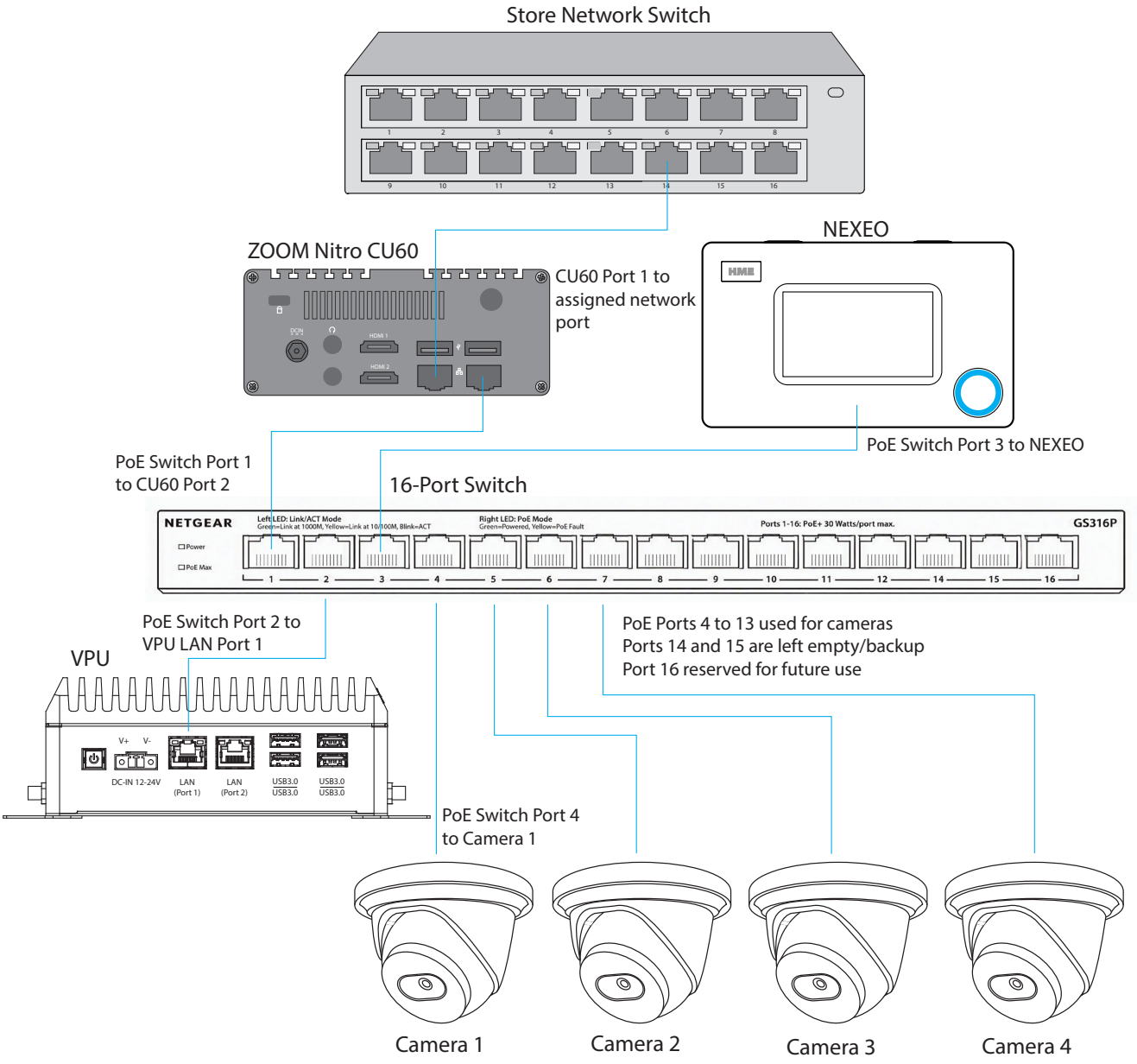


Fig. 3.23

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ZOOM NITRO NETWORK CHECK AND CAMERA VIEW

1. Connect a USB mouse (type A) to the vacant USB port on the CU60 (or access remotely).
2. Access the Store's ZOOM Nitro system. Go to the LOGIN page and log in using the installer's password.

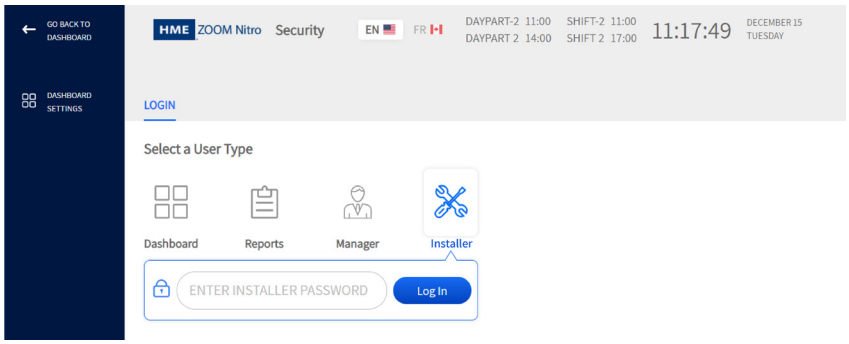


Fig. 4.1

3. Go to NETWORK and select the LOCAL NETWORK > CONTROL UNIT NETWORK tab.
4. Ensure that DHCP and NTP are enabled. The fields populate automatically. See Fig. 4.2

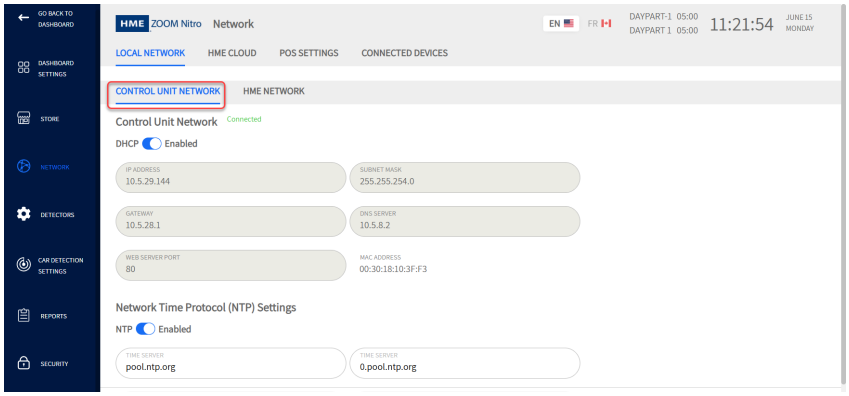


Fig. 4.2

5. Under HME NETWORK tab, verify the VPU is listed under HME Devices Test (these fields auto-populate).

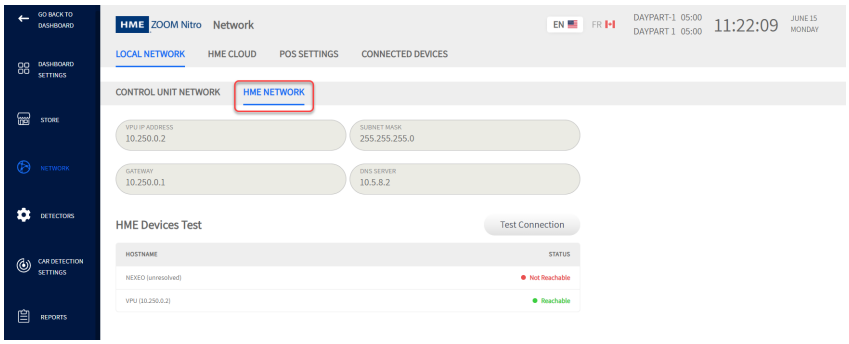


Fig. 4.3

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6. Go to the DETECTORS page and select the CAMERA tab, then toggle the switch to Enable the camera.

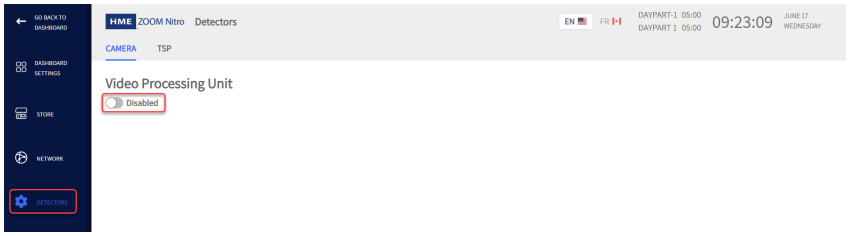


Fig. 4.4

7. The Camera page will populate. Click/tap the "Refresh All Cameras" button (Fig. 4.5).

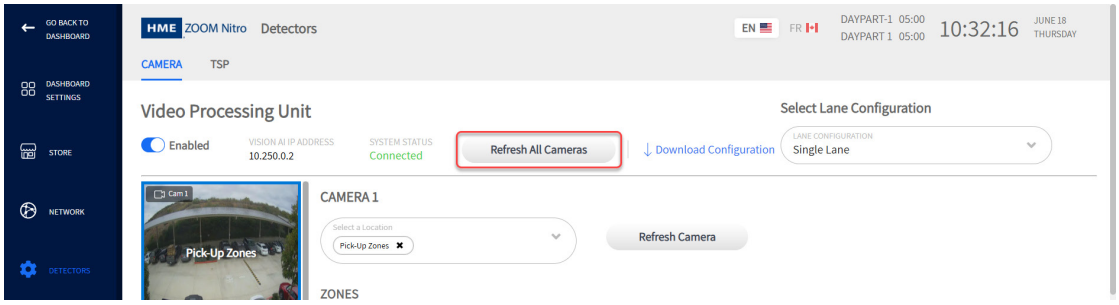


Fig. 4.5

8. With the Camera Preview now displayed (Fig. 4.6), determine if the view is good enough to draw zones. If not, the camera angle will need to be adjusted. After each adjustment, use the "**Refresh All Cameras**" button to refresh the preview image to the newly adjusted angle.

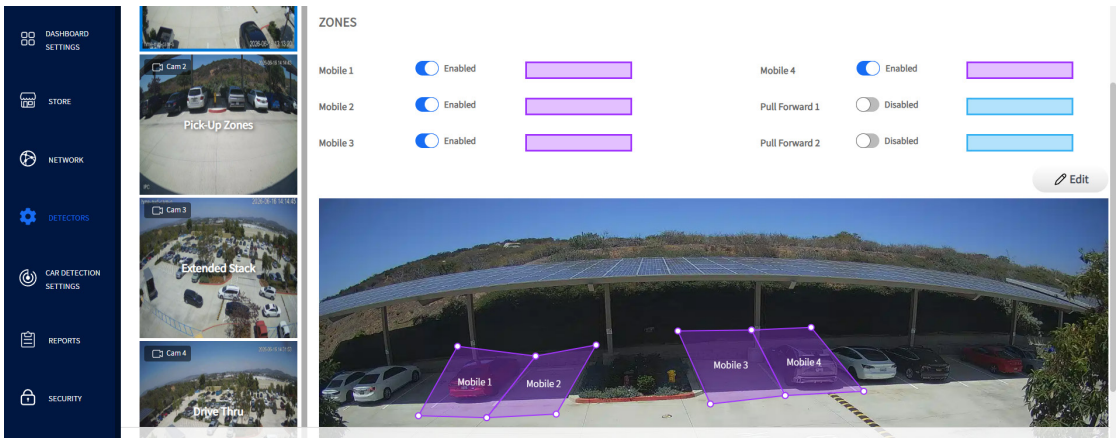


Fig. 4.6

9. Once the view is good, proceed to the next section.

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1. If you are already logged in to ZOOM Nitro from the previous section, skip to step 4. Otherwise, access the Store's ZOOM Nitro. Go to the LOGIN page and log in using the installer's password.

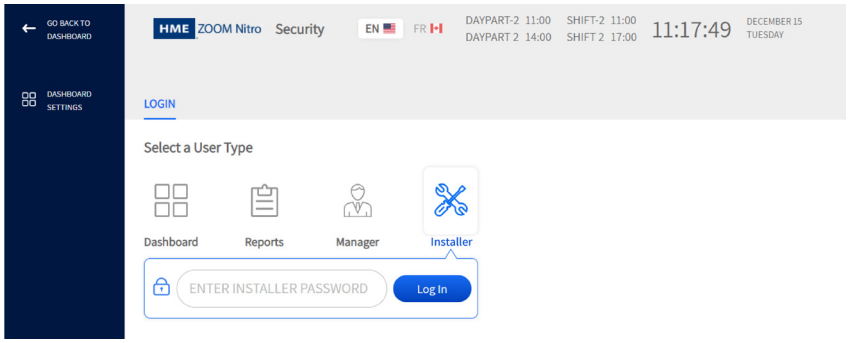


Fig. 5.1

2. Go to the DETECTORS page and select the CAMERA tab, then toggle the switch to enable the camera.

> ***NOTE:*** The TSP tab is only visible if a TSP is connected as seen in Fig. 5.2.

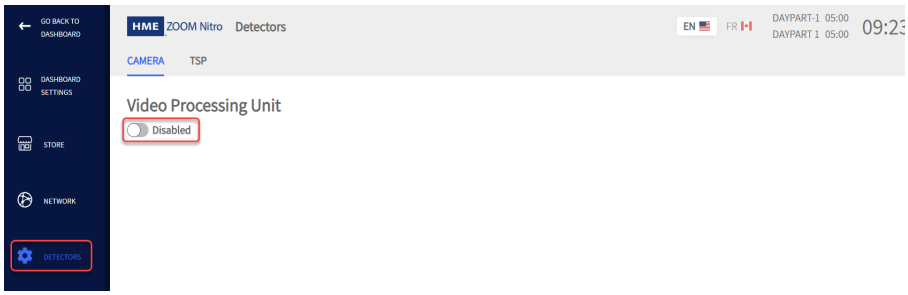


Fig. 5.2

3. The Camera page will populate. Click/tap the "Refresh All Cameras" button to see preview.

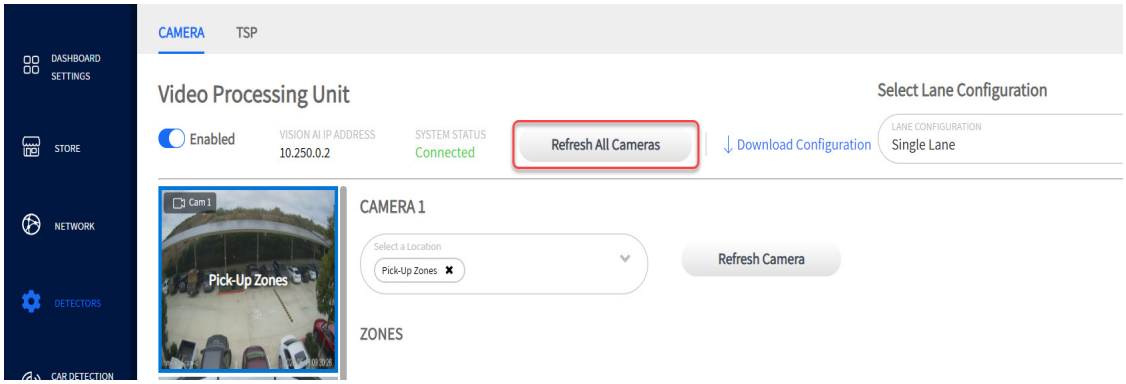


Fig. 5.3

4. All installed cameras are displayed in tiles stacked vertically on the left. Click on a Cam tile to select it. A selected tile is indicated by a blue frame around it (Fig. 5.3 for example shows the top tile (Cam 1) selected).

5. Select a location from the drop-down list (Pick-Up Zones is selected under CAMERA 1 in Fig. 5.4).

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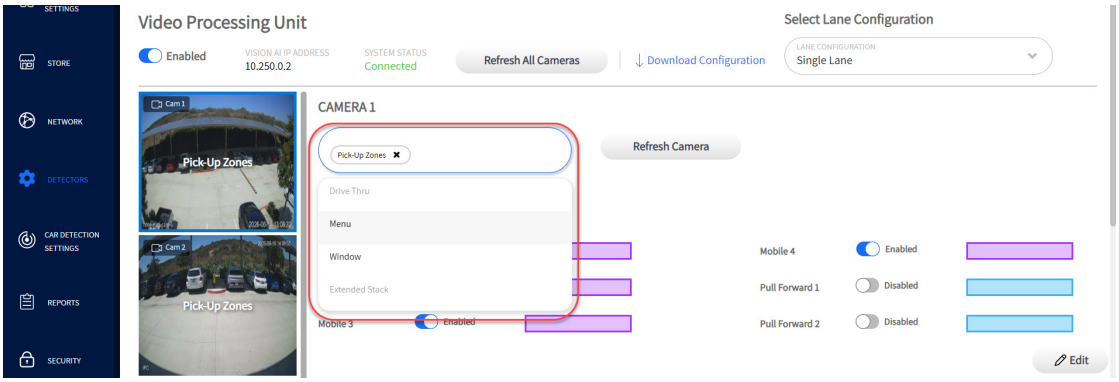


Fig. 5.4

6. The location options are Drive-Thru or Pick-Up Zones. Once an option is selected, the page will populate with zones. Steps 7 - 11 cover Pick-Up Zones, while steps 12 - 16 cover Drive-Thru, and Extended Stack. Step 17 covers Menu and Windows.

Pick-Up Zones

7. If Pick-Up Zones is selected, toggle the switch to enable a zone, and a polygon (in purple or blue) will appear in your camera view. Fig. 5.5 shows Mobile 1, 2, and 3 enabled, so three purple polygons appear in the camera view. When you move the cursor over a polygon, it turns into a hand that lets you grab and drag it into position.

> ***NOTE:*** With Pick-Up Zones, even though six zones (four mobile and two pull-forward) are listed on-screen under a camera. A single camera can only support a maximum of four zones. Up to four mobile spaces, or up to two pull-forward spaces, or a combination of both, totaling four when all are within the field of view of that camera.

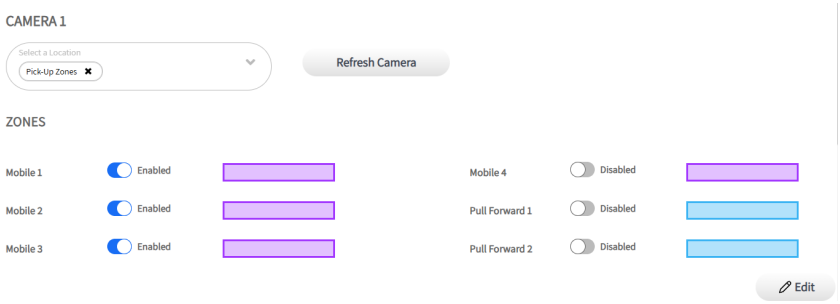


Fig. 5.5

8. The polygon has four adjustable vertices, one on each corner. After moving the box into a parking space, grab any corner vertex and adjust the polygon to match the parking space. See Mobile 1 in Fig. 5.6.

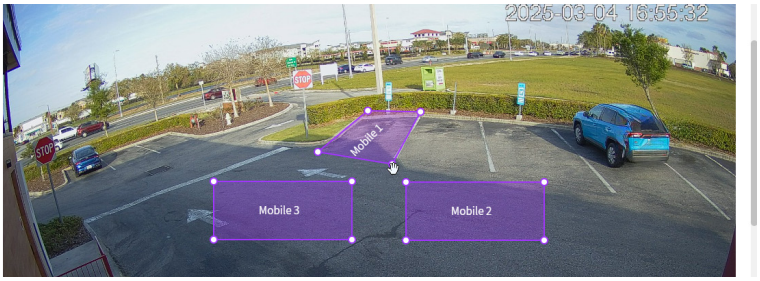


Fig. 5.6

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9. Repeat the process for additional mobile spaces (up to four total per camera). Fig. 5.7 shows three mobile spaces configured. For easy identification, it is best practice to assign the space numbers in order (left to right in this example). You can also rename these polygons by clicking inside polygon label.

> ***NOTE:*** When Pick-Up Zones are adjacent, like the ones shown in Fig. 5.7, the adjacent sides should overlap (i.e., no gaps can exist between the polygons). See first bullet point in Step 13. Gaps can exist if the polygons are not side-by-side (i.e., separated by a parking space, or by at least 3 ft (0.9 m)). Pull-Forward and Mobile spaces can also alternate side-by-side. For example, the layout in Fig. 5.7 could be configured with two Mobile spaces and a Pull-Forward space in between (the space currently occupied by Mobile 2).

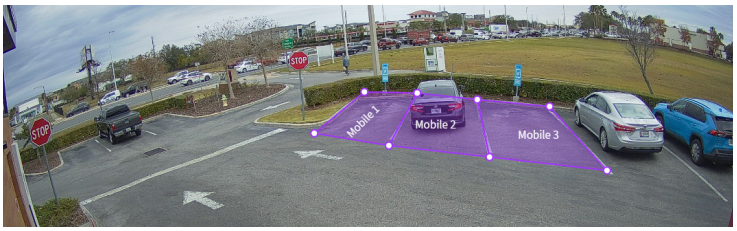


Fig. 5.7

10. Once the zones are configured, click/tap the "Save" button.
11. Pull-Forward spaces (blue) are also configured here like mobile spaces. The system only supports a maximum of two Pull-Forward spaces.

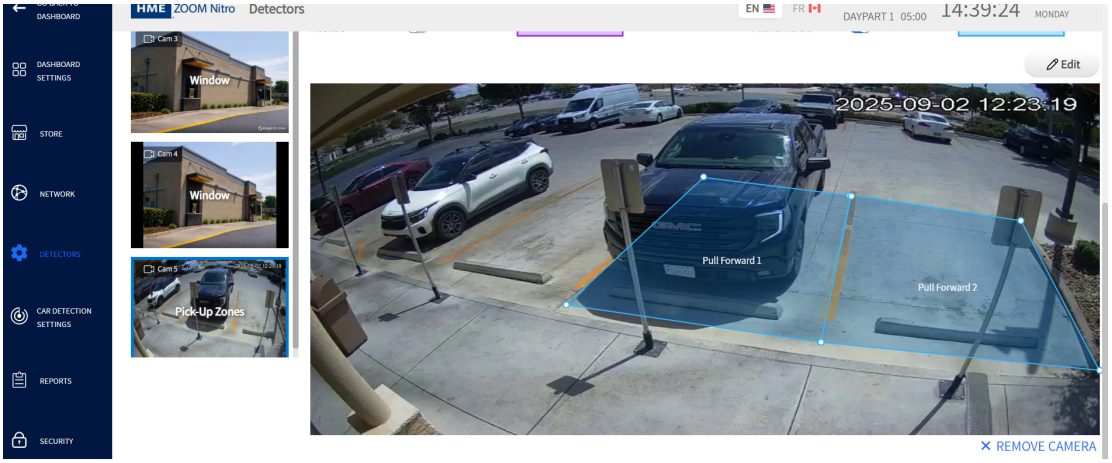


Fig. 5.8

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Drive-Thru

12. If Drive-Thru is selected from the Location drop-down list, two zones appear: the Pre-Menu Stack and Pre-Menu zone. Toggle both switches to enable both zones, and two polygons (red and orange) will appear in your camera view like those shown in Fig. 5.9.

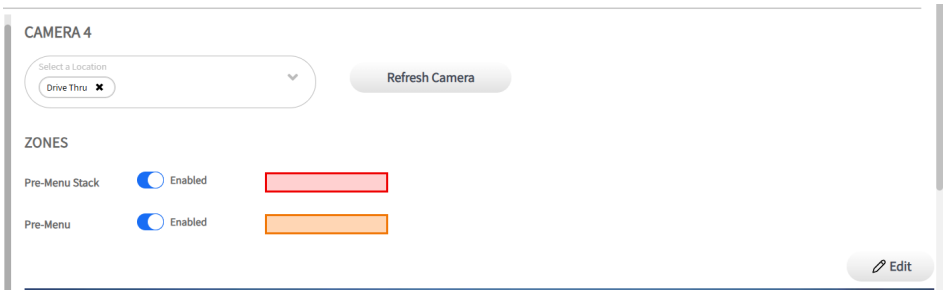


Fig. 5.9

13. When you move the cursor over a box, it turns into a hand that lets you drag it into position. These polygons have eight adjustable vertices, one on each corner and one on each side. After moving the box into position, grab any vertex and begin adjusting the box to match the Pre-Menu and Pre-Menu Stack zones you desire to capture. Fig. 5.10 shows both zones drawn to capture the drive-thru lane events.

    Things to consider when configuring zones:
    - Both zones must butt up against each other with no gap between them. The best way to accomplish this is by moving the adjoining vertices from one box on top of the corresponding vertices of the other box until both contacting edges overlap.
    - The Pre-Menu Stack should be a few cars deep, if possible, and should capture only cars entering the drive-thru. So, if done in a parking lot with additional parking spaces and traffic lanes, don't make the polygon too large or sloppy (as they may capture stray cars outside the zones).
    - The Pre-Menu should be at least one car length before reaching the menu board and only wide enough to capture that one lane.
    - Cars must pass through both zones.
    - Avoid areas that can block the camera's view of cars. While small occlusions might be acceptable if a large portion of the vehicle remains visible, large occlusions can lead to inaccuracies.



Fig. 5.10

14. Once the car size and zones are configured, move the Car Size polygon out of the Pre-Menu and Pre-Menu Stack area before saving. Click/tap the "Save" button.
    Fig. 5.11 shows an example of a Y Lane. It is configured the same way a Single Lane is configured. The only difference is that it has two Pre-Menu zones instead of one.

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Fig. 5.11

Drive-Thru with Extended Stack

15. Extended Stack is selected from the drop-down list. While Extended Stack requires a dedicated camera, it must be used in conjunction with another Drive-Thru camera (i.e., it does not function independently).

16. Extended Stack allows a store to capture more vehicles beyond the Pre-Menu Stack, thus providing an extended range of metrics. It is combined with the Pre-Menu Stack data and treated as such (not as a separate metric on the dashboard). While the Extended Stack should be positioned close to the Pre-Menu Stack, it can have a small gap (unlike the Pre-Menu, which must butt up against the Pre-Menu Stack with no gap). This is because it uses a separate camera to monitor a single zone. Fig. 5.12a shows the drive-thru camera with Menu Stack (Pre-Menu and Pre-Menu Stack combined), while Fig. 5.12b shows the Extended Stack camera capturing the area to the right of the Menu Stack.



Fig. 5.12a



Fig. 5.12b

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Things to consider when configuring the Extended Stack:

- The Pre-Menu and Pre-Menu Stack zones should be drawn first before drawing the Extended Stack.
- The Extended Stack camera view must be positioned before the Pre-Menu Stack so that the Pre-Menu Stack becomes the middle zone between Pre-Menu at one end and the Extended Stack at the other.
- If overlapping, the camera view for Extended Stack must not overlap the Pre-Menu/Pre-Menu Stack camera view by more than 25%. (Do not confuse this view with the zone polygon that is adjusted within the camera view. The polygon cannot touch or overlap the Pre-Menu Stack polygon).
- If not overlapping, any gap between the camera views of both cameras cannot exceed two cars. (Likewise, do not confuse this view with the zone polygon that is adjusted within the camera view.)
- The zone must be turned on before mapping.
- Extended Stack is one zone, and the polygon once drawn cannot overlap or touch the Pre-Menu Stack polygon. There should be a clearly defined gap between both polygons, less than two vehicles long.
- Extended Stack should be drawn in an area where cars will queue as they enter the Pre-Menu Stack and Pre-Menu zones. It doesn't matter if cars pass through the Extended Stack without stopping or entering the drive-thru lane, since the system discards such cars.
- Detection will still work if a car is only detected moving from the Pre-Menu Stack into the Pre-Menu zone, but was not detected in the Extended Stack.

Menu and Window

17. Once a vehicle passes through the Menu Stack, cameras can also be set up to capture the menu ordering point and drive-thru lane windows beyond this point such as a Cashier window where purchases are paid for and a Service window where customers receive their purchased items.

> ***NOTE:*** Menu and Window can also be monitored using ground loops. When used, cameras are not required but a TSP60 is required for loop connection. See "Install the Basic ZOOM Nitro system" on page <?>. Loops are configured on the Car Detection Settings page of the ZOOM Nitro user interface. See "Configuring when using a TSP with Loop Detectors" on page 38.

Menu

Fig. 5.13 shows Menu selected from the dropdown list.

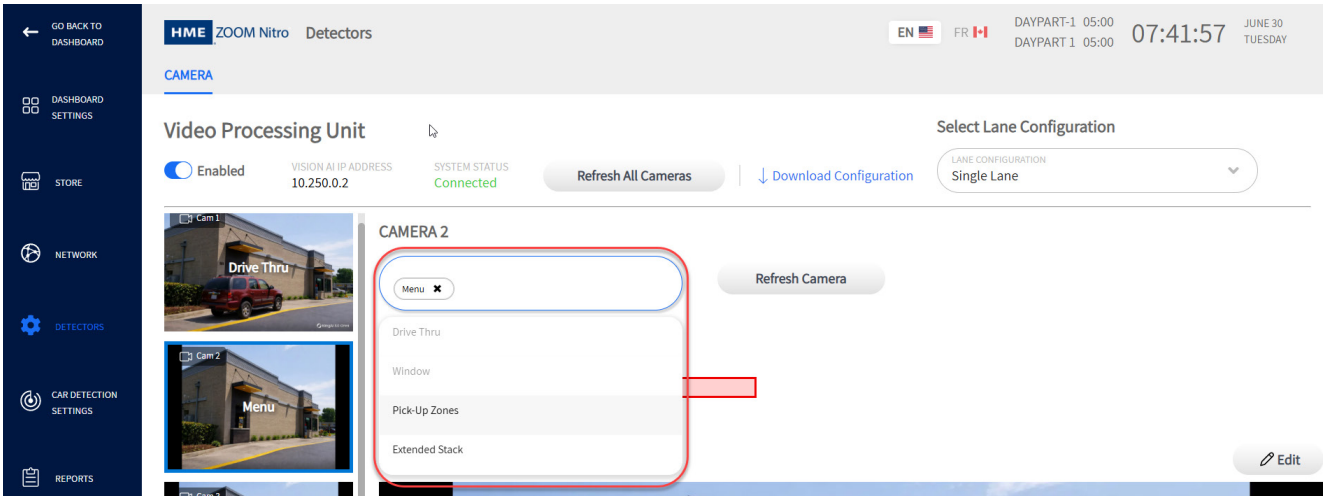


Fig. 5.13

Fig. 5.14 shows an example when Menu is enabled. This is a single zone monitored. You'll notice that you can also enable greet if you desire a greeting be played when the customer arrives at the menu.

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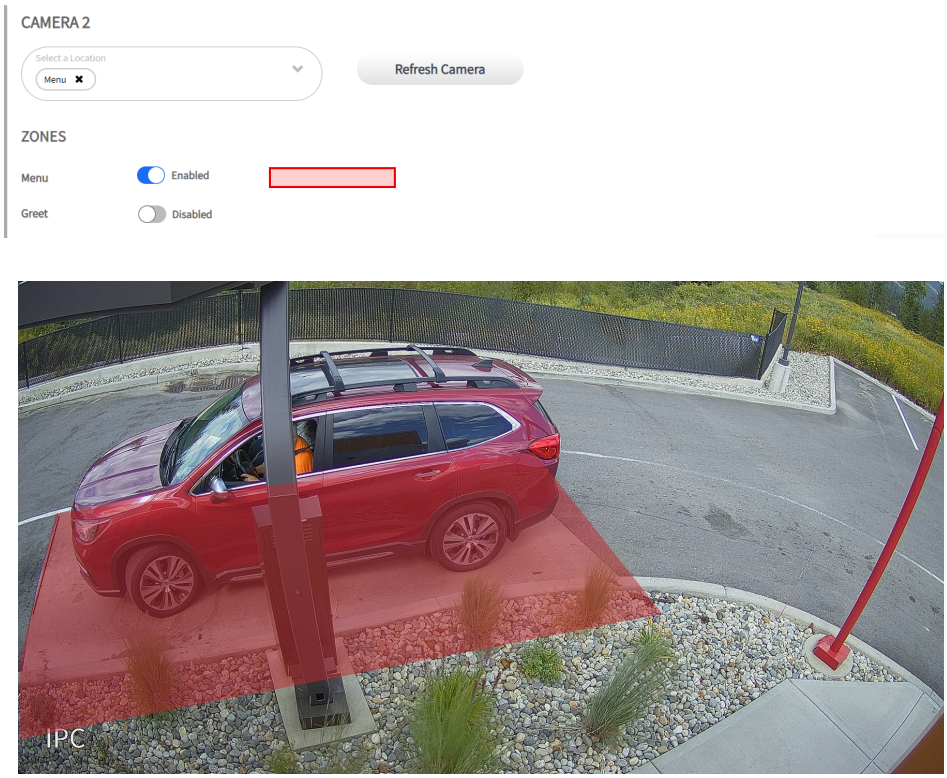


Fig. 5.14

Window

Fig. 5.15 shows Window selected from the dropdown list.

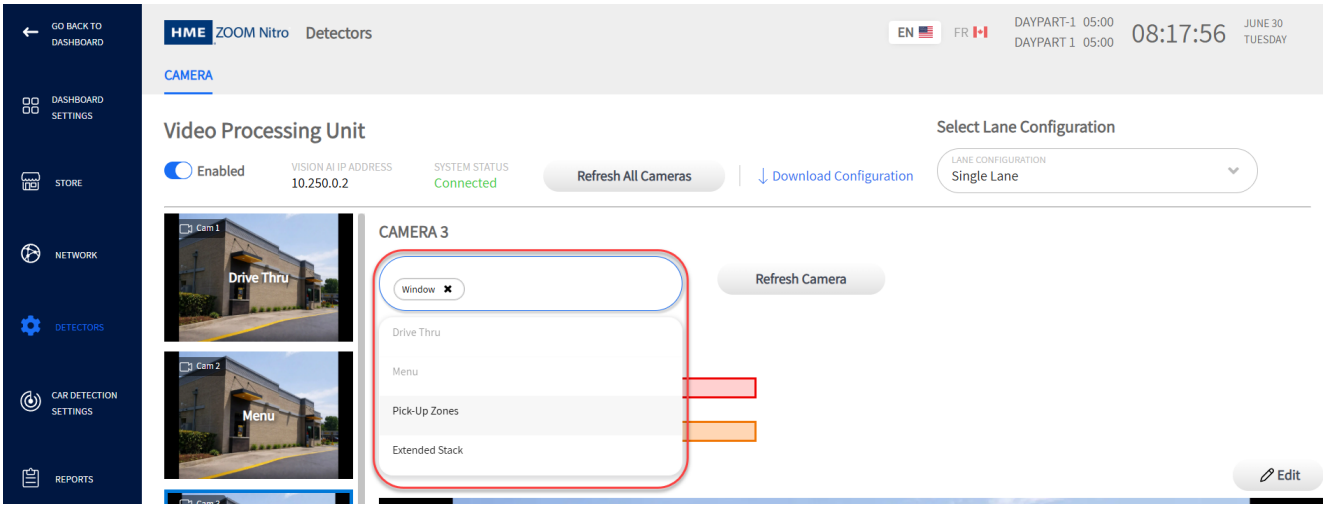


Fig. 5.15

Fig. 5.16 shows an example when a Window zone is enabled. One window labeled Service is monitored with this camera. If the drive-thru had a separate Cashier and Service window, both would be enabled and two detection zones could be monitored by this camera if both were within view.

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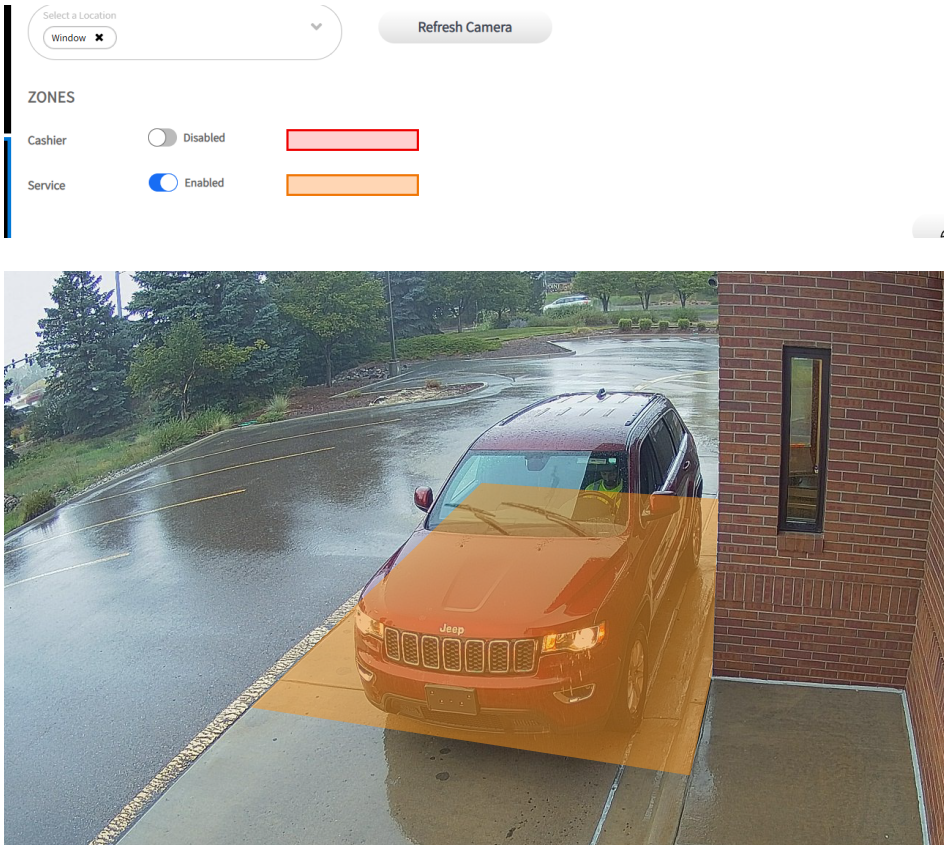


Fig. 5.16

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Error Prompts when Configuring Polygons

When customizing polygons for a store, invalid adjustments generate a red prompt box at the bottom of the camera view. The configuration cannot be saved until the error is corrected. The following errors may occur:

- **Polygons do not share at least two points, Pre-Menu Stack with Pre-Menu. Please try again.**
  The Pre-Menu and Pre-Menu Stack zones must share at least two vertices (one edge). The recommended method is to place the vertices of one polygon directly on top of the corresponding vertices of the adjoining polygon. Once positioned correctly, the edges of the two polygons will touch with no gap between them. If this error occurs, adjust the polygons so that at least one edge of each polygon overlaps the adjoining edge.
- **Vertices must be within the resolution of camera 2 at vertex 2. Please try again.**
  All vertices must remain within the visible camera view. For example, a Mobile Space polygon contains four corner vertices that can be adjusted to change its shape. If a vertex is moved outside the camera view, this error appears. In this example, vertex 2 has been moved outside the visible area. Move the vertex back into the camera view to correct the error.
- **Crossing line detected in Pre-Menu zone. Please try again.**
  This error occurs when a vertex is dragged across one of the polygon's edges, causing the polygon lines to intersect. Adjust the vertex so that no edges cross.
- **Invalid overlap detected in camera 2. Please try again.**
  This error occurs when part of one polygon overlaps another polygon. Adjust the polygon boundaries so that the polygons do not overlap.

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Relabeling Zones

Figure 6.1 shows four configured zones labeled Mobile 1, Mobile 2, Pull Forward 1, and Pull Forward 2. To rename these zones, click Edit above the camera view.

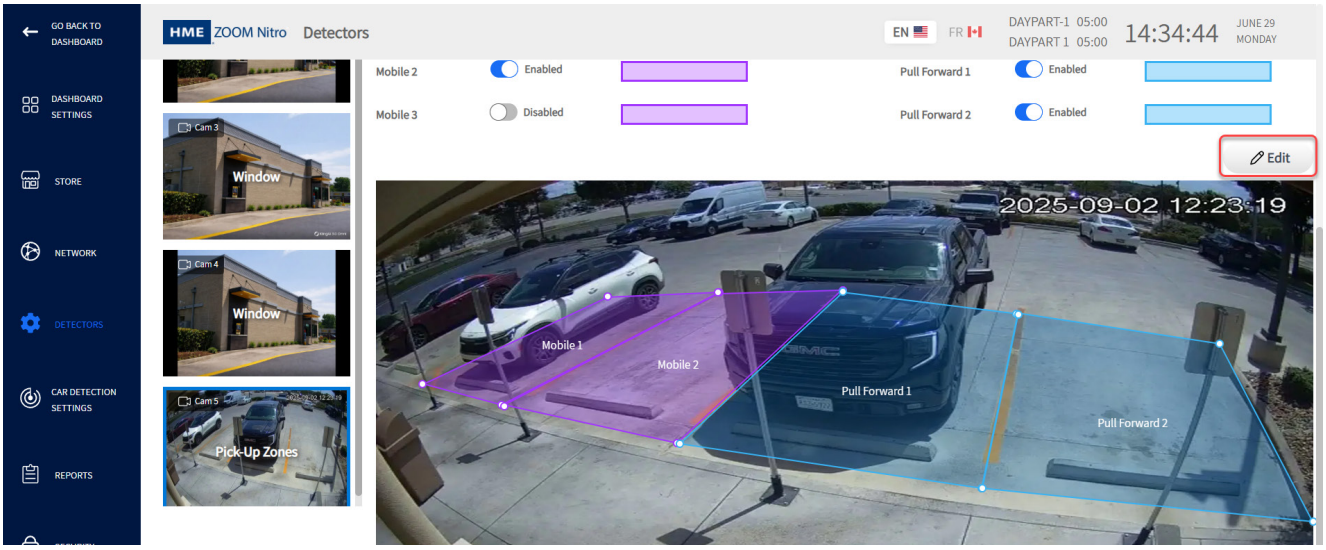


Fig. 6.1

The polygon fill colors disappear, allowing the labels to be edited. Click a label and enter the desired name. When finished, click Save Changes. See Figure 6.2.

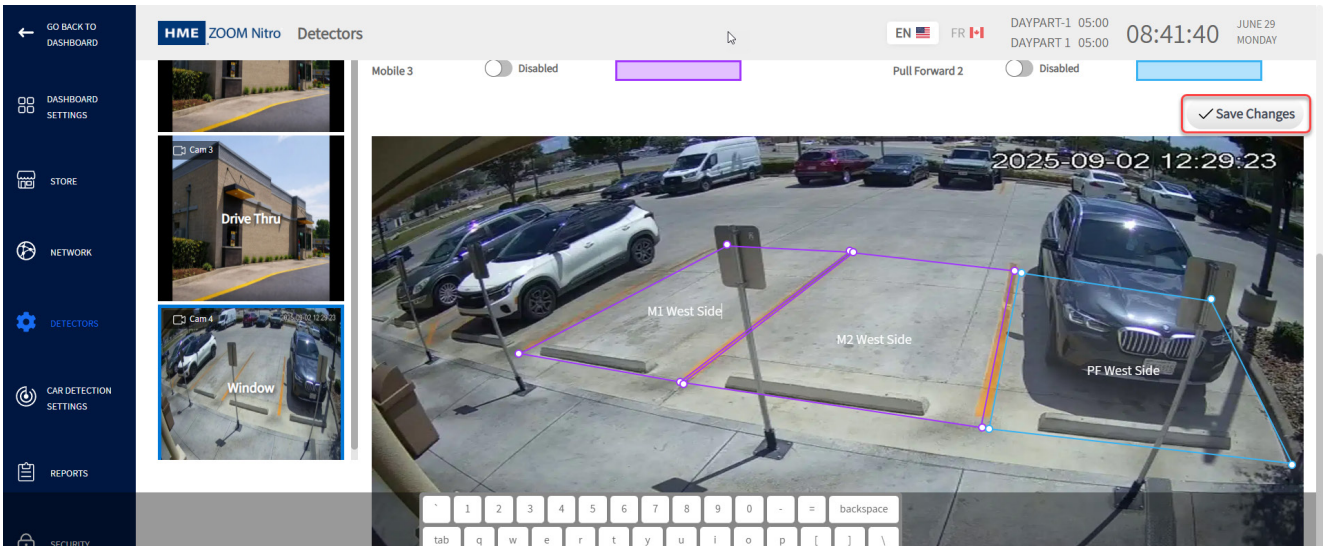


Fig. 6.2

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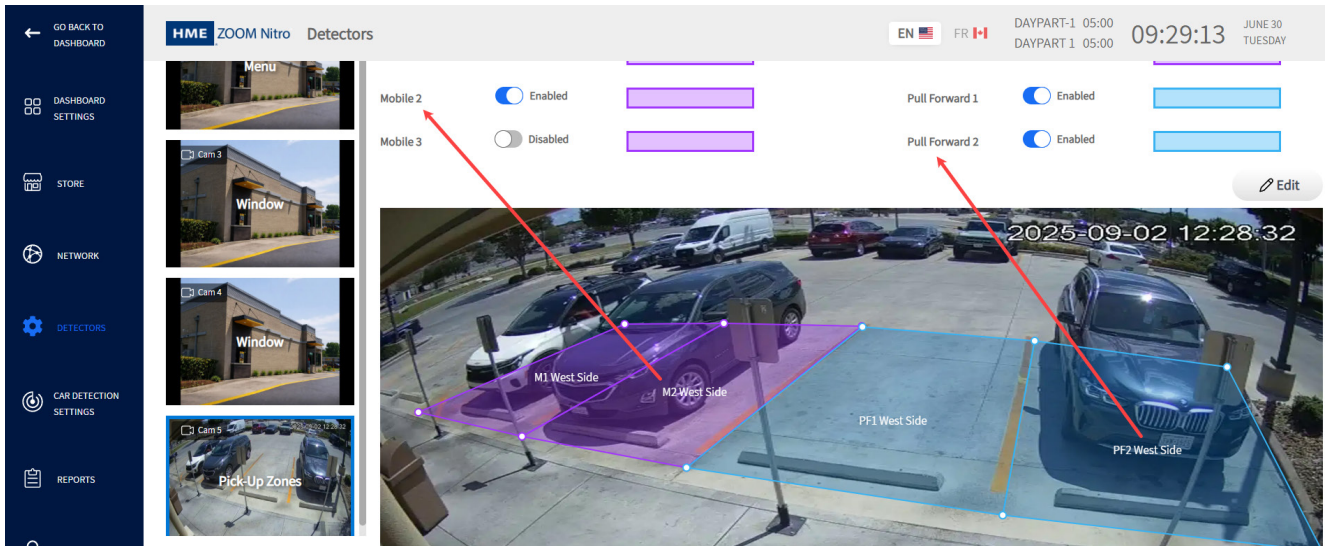


Fig. 6.3

> ***NOTE:*** Although the zone labels in the camera view can be renamed, the labels in the Zones section above the camera view remain Mobile 1, Mobile 2, Pull Forward 1, and Pull Forward 2. See Figure 6.3.

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Examples of Camera Views when Configured

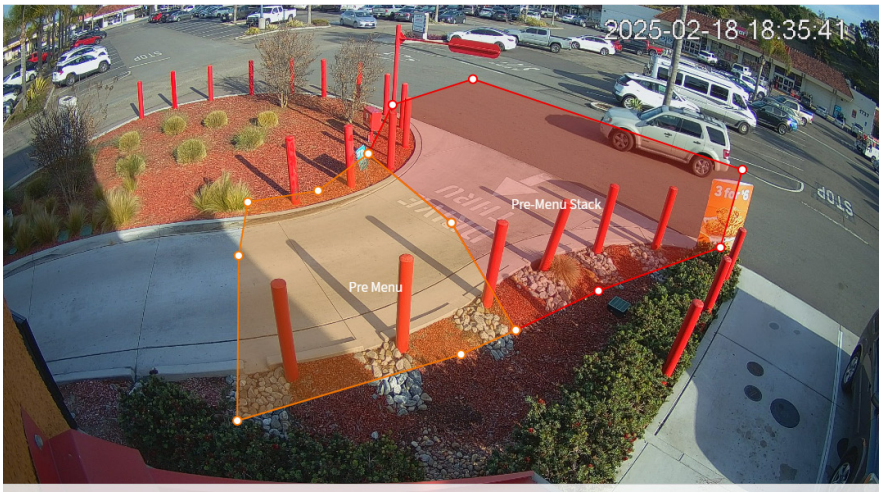
The following images show examples of camera views in Drive-Thru Lanes and Mobile spaces.



Single Lane Drive-Thru Example 1



Single Lane Drive-Thru Example 2



Single Lane Drive-Thru Example 3

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Single Lane Drive-Thru Example 4

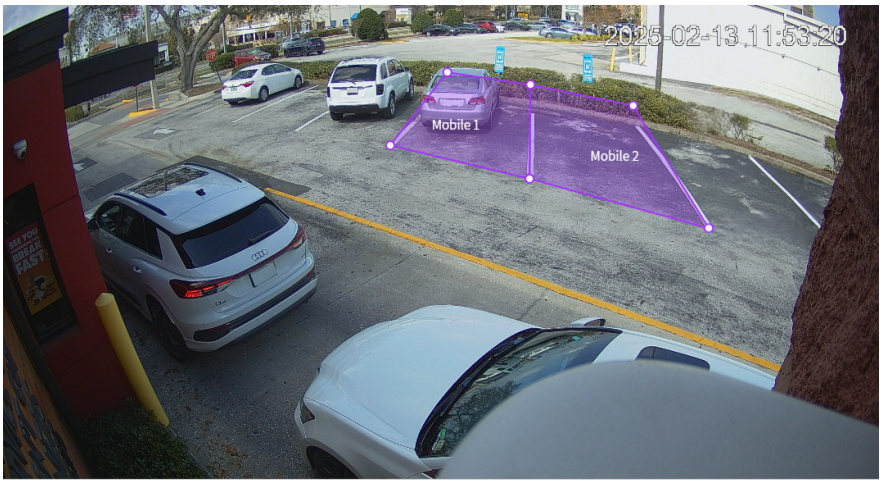


Y Lane Drive-Thru Example 1

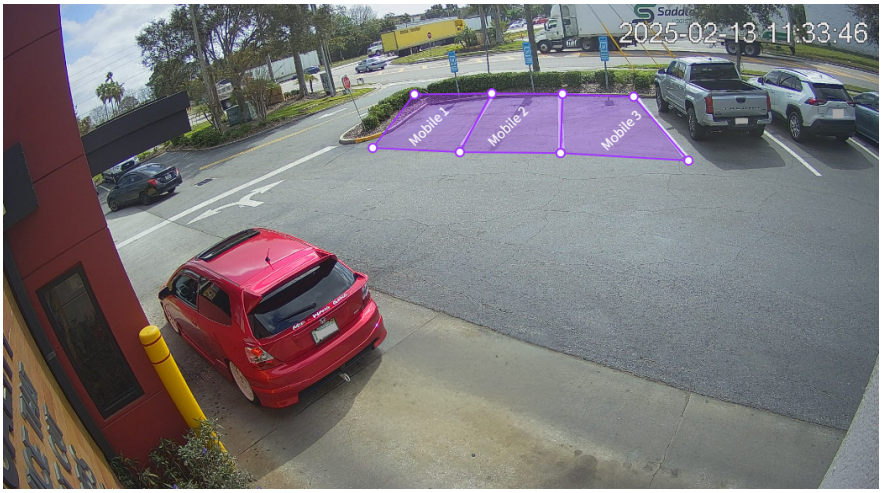


Y Lane Drive-Thru Example 2

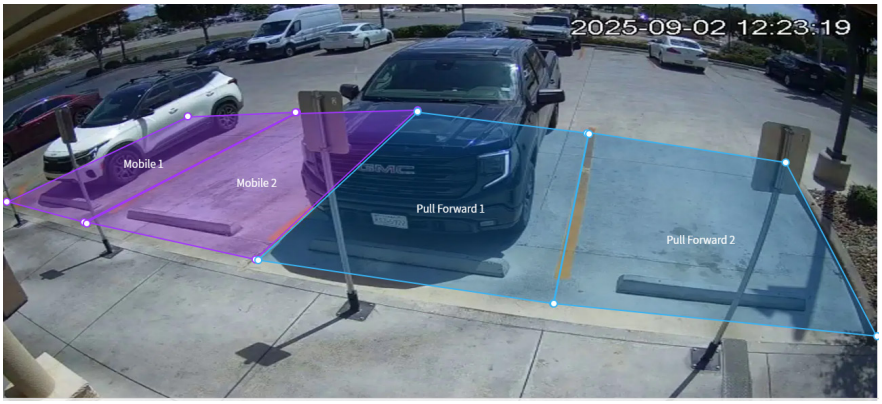
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Mobile Example 1

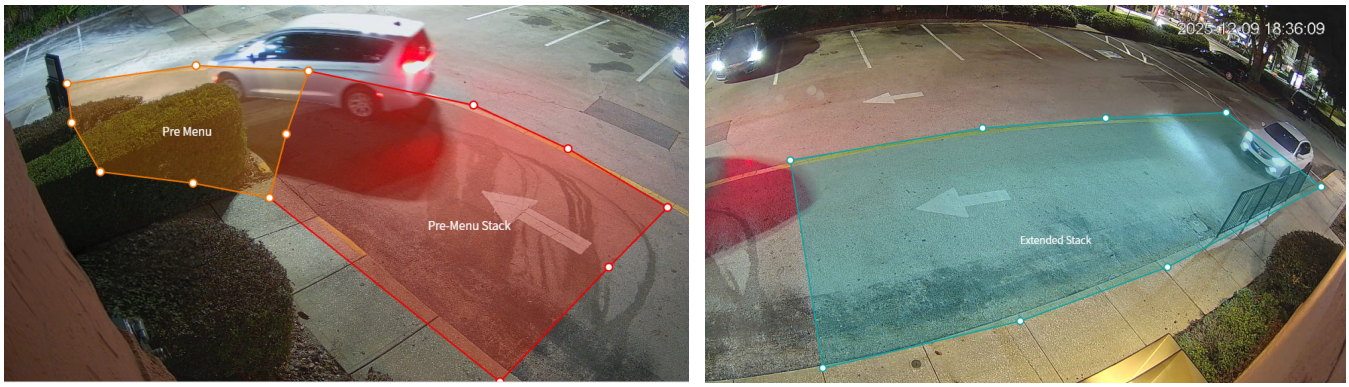


Mobile Example 2



Mobile and Pull-Forward Example 1

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Menu Stack camera (left image) with associated Extended Stack camera (right image) Example 1



Menu Stack camera (left image) with associated Extended Stack camera (right image) Example 2

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> **NOTE:** *Take a snapshot of the dashboard before making changes so the original settings can be restored if any configuration is lost or changed accidentally.*
>
> *A CU reboot is required whenever Lane Configuration settings or Detection Types are changed, added, or removed. CU cable swaps to Ports 1 and 2 also require a CU reboot.*

Once the camera zones have been defined, additional parameters can be configured on the ZOOM Nitro dashboard depending on the metric you wish to measure. For example, if the customer wants to include Menu Stack events as part of their lane total:

1. Go to CAR DETECTION SETTINGS>LANE SETTINGS.
2. Use the drop-down lists to select "Menu Stack" in the START TOTAL field and the desired option in the START AT field. See Fig. 7.1.

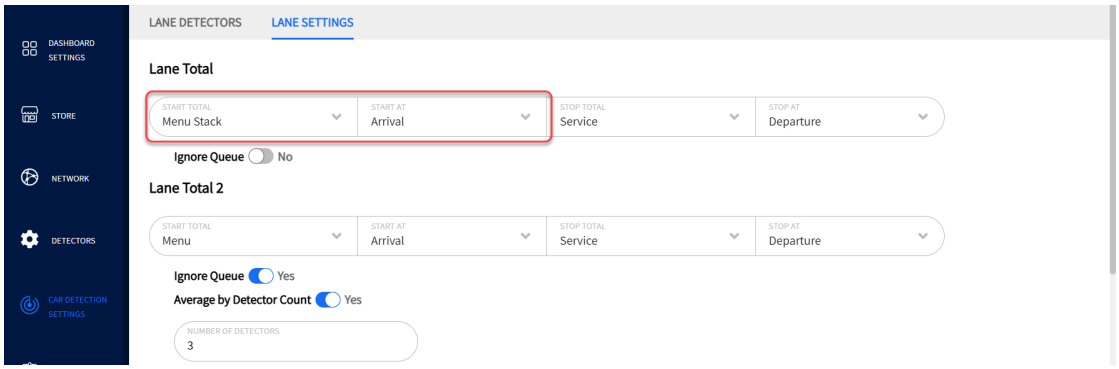


Fig. 7.1

Fig. 7.2 shows where wait areas such as Mobile Pickup and Pull-Forward spaces, are displayed on the dashboard. In this example, the Wait Area above the Mobile Pickup zone is a Pull-Forward zone. They appear in the same general location on the dashboard regardless of their actual location on the premises.

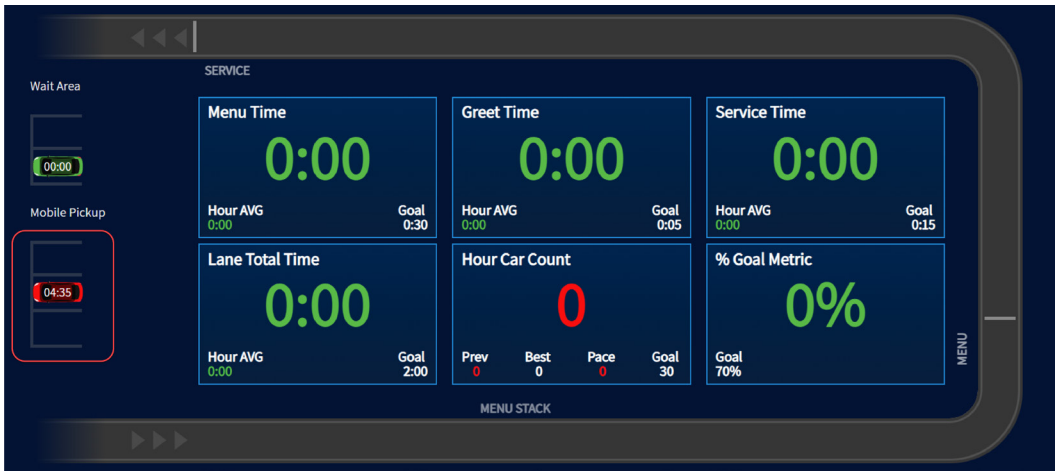


Fig. 7.2

3. To change this layout orientation, go to CAR DETECTION SETTINGS>LANE SETTINGS. Expand the **Ad-**

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vanced Settings and select one of four orientation choices. In Fig. 7.3 the second horizontal layout is selected and reflected as such on the dashboard.

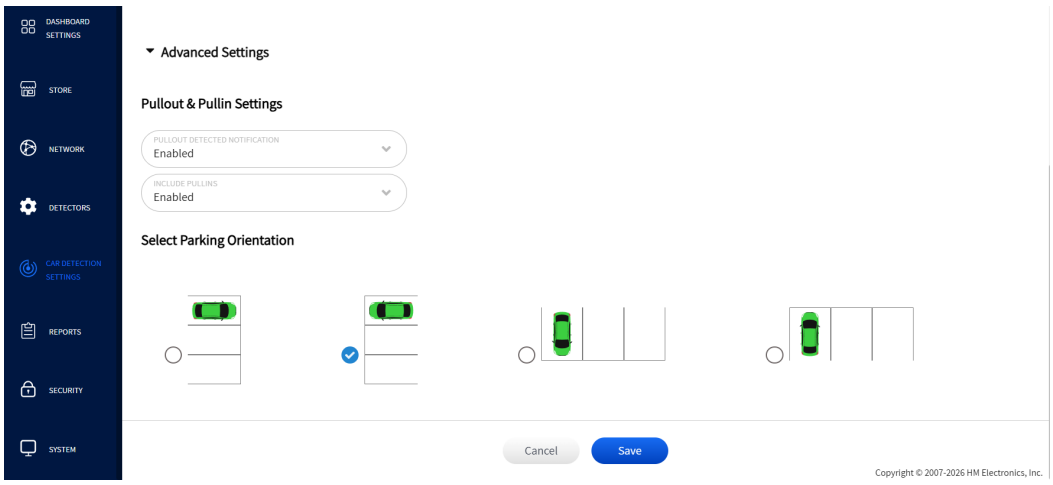


Fig. 7.3

Fig. 7.4 shows how Menu Stack appears on the dashboard.

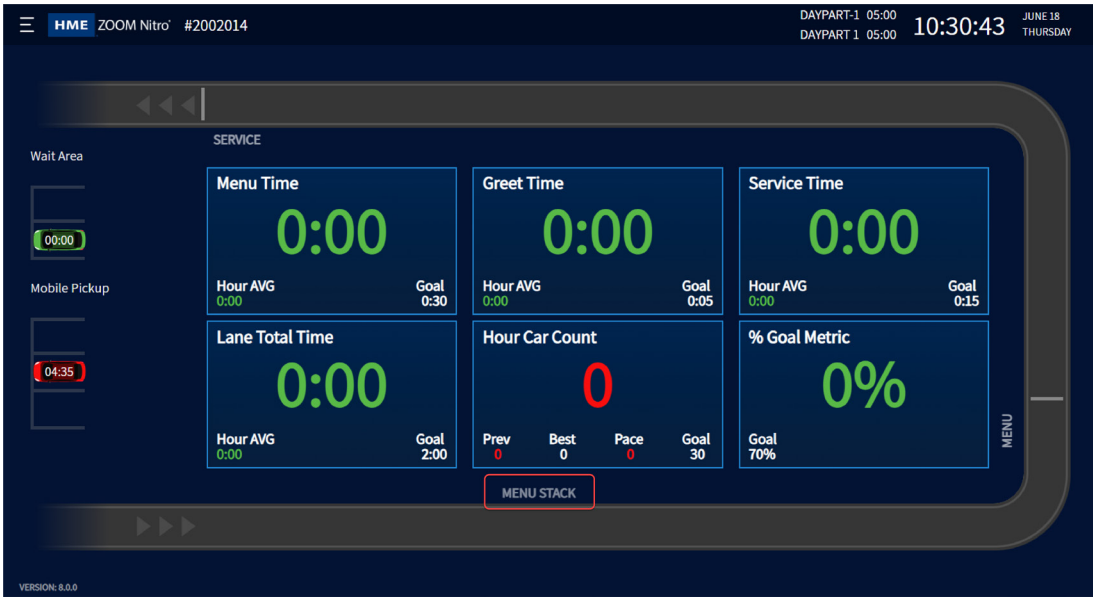


Fig. 7.4

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Configuring when using a TSP with Loop Detectors

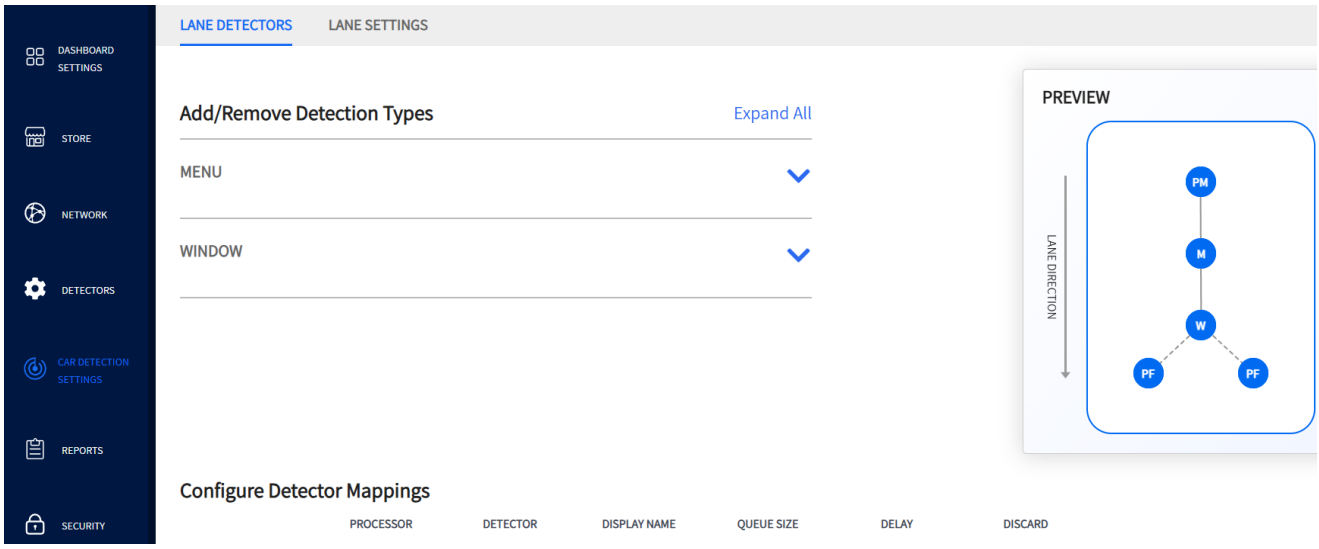


Fig. 8.1

1. If the store also uses loop detectors, go to the **CAR DETECTION SETTINGS** menu option and select the LANE DETECTORS tab. This screen lets you customize the system for the store's layout.
2. Use the **Add/Remove Detection Types** option to select a loop detector location (Fig. 8.2 and 8.3).
3. Use the **Configure Detector Mappings** option to configure them (Fig. 8.4).

Example: Fig. 8.1 shows a Single Lane store with one Pre-Menu (PM), one Menu (M), one Window (W), and two pull-forward detectors (PF). The PM and PF detectors shown in the PREVIEW pane are camera-based detectors. They are configured on the **DETECTORS** page and therefore do not appear in the **Add/Remove Detection Types** section. Therefore, only Menu and Window appear under **Add/Remove Detection Types** because they are controlled by the TSP60. To make adjustments to these menus, click on the down-arrow to the right of **MENU** to expand (see Fig. 8.2). Toggle the **Include Greet** switch on. The menu tile beneath the switch updates to reflect the change (see Fig. 8.3). See NOTE under "Vision AI on the ZOOM Nitro Dashboard" on page 36.

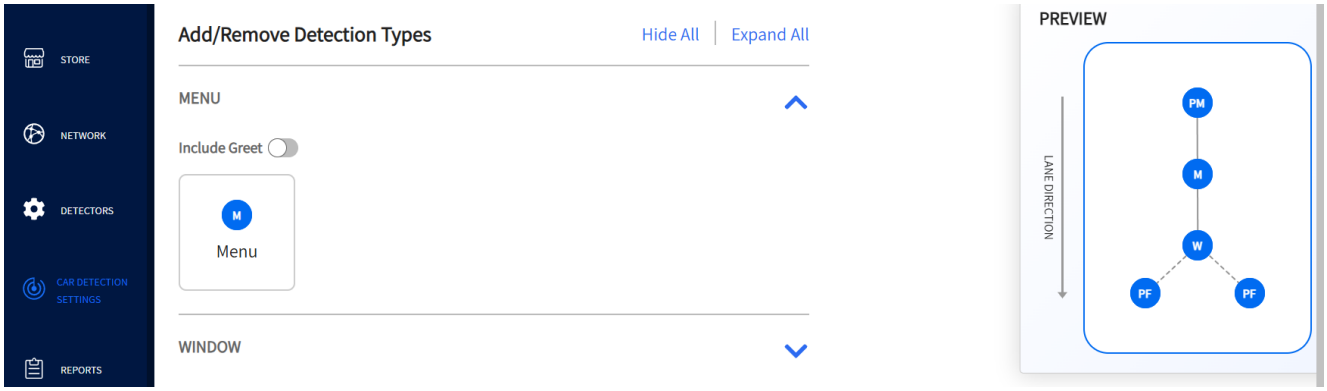


Fig. 8.2

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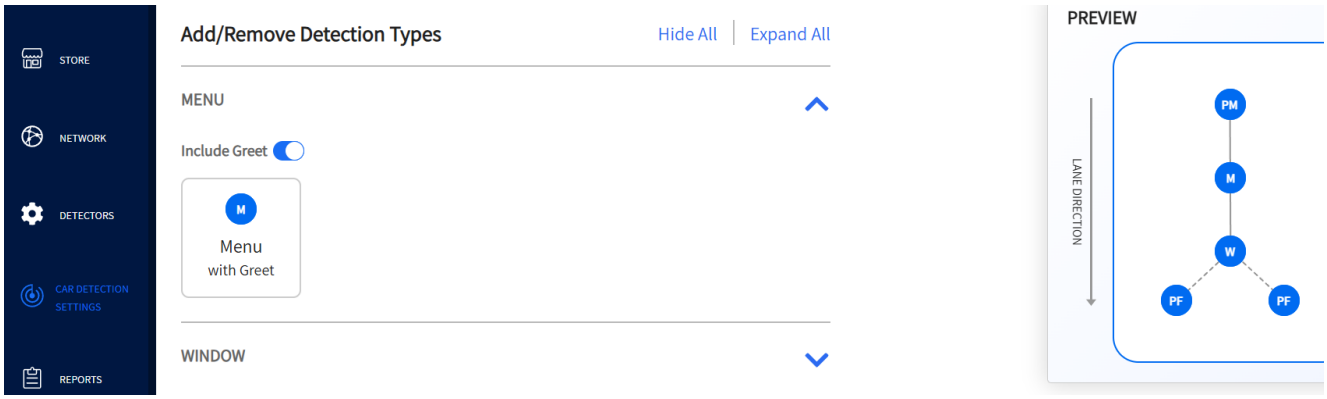


Fig. 8.3

The **Configure Detector Mappings** section allows you to map your detectors to a Vehicle Number (Veh #). This Veh # corresponds to the Veh # on the TSP, so it must match the actual detector connection. You can assign a descriptive name in the DISPLAY NAME field and select a QUEUE SIZE from the drop-down list. Queue size is the number of vehicles that can fit between this detection point and the next.

For example, in Fig. 8.4, "(M) Menu" is mapped to Veh 5, and assigned the display name "Menu," and the queue size selected is 6 Cars. This indicates that six vehicles can fit between this detection point and the next detection point, "(SV) Service," which is mapped to Veh 6 and assigned the display name "Service." Since Service is the last detector in the lane, no queue size is required beyond this point. (Pull Forward spaces are excluded.) Greet does not require a queue size. See the Delay or Discard definitions in the Glossary of Terms if these fields need to be adjusted, otherwise leave them at default.

> ***NOTE:*** *Queue size does not include vehicles at the detection points; it includes only vehicles between them. An estimated spacing of 20 ft (6.1 m) per vehicle is used.*

You must always map using the correct Detector label. For example, if the detector you are configuring is connected to Veh 3 on the TSP, you must assign it to Veh 3 from the DETECTOR drop-down list.

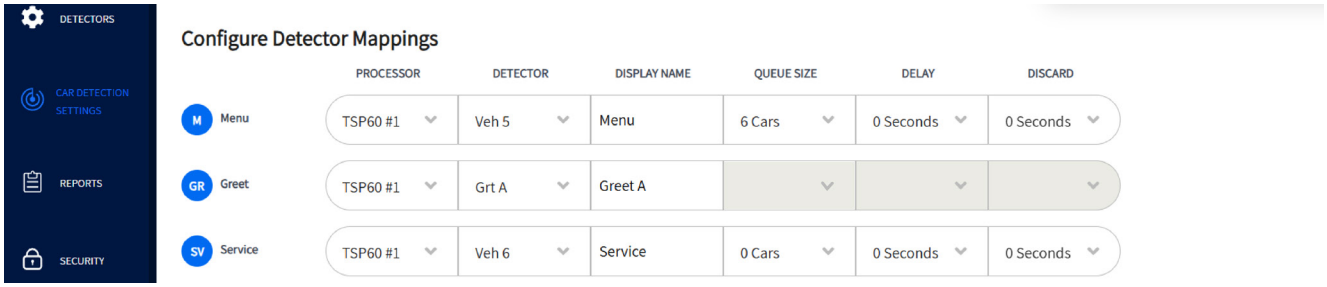


Fig. 8.4

Completing the Installation

1. Complete the final testing with the HME Support contact.
2. Complete Site cleanup.
3. Complete all necessary paperwork to close out a successful installation or escalate to HME Technical Support if there are any issues.

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TROUBLESHOOTING

For unresolved issues or those not covered in this section, please call HME Technical Support at: 800 848 4468.

Electrical Power Outage: If the system fails to function properly after a power outage, power it off and unplug the AC power adapters from their electrical outlets. Wait a few seconds, plug the adapters back in, and then power the system on.

UNDERSTANDING THE STATUS LEDS ON THE POE SWITCH

Each port on the PoE switch has two indicators. The left LED indicates link and activity status while the right LED indicates Power over Ethernet status. These can help when troubleshooting the system.

PoE Switch LED Reference Table		
Indicator	**LED State**	**Indicator Meaning**
Power LED (system)	= On	Switch has power
	= Off	Switch has no power supplied
PoE Max LED (system)	Solid yellow	Less than 7 W of PoE power is available
	Blinking yellow	A time during the previous 2 minutes when less than 7 W of PoE power was available
	= Off	Sufficient PoE power is available (more than 7 W)
Left LED (per port)	Solid green	1000 Mbps link on this port
	Blinking green	1000 Mbps activity on this port
	Solid yellow	100 Mbps or 10 Mbps link on this port
	Blinking yellow	100 Mbps or 10 Mbps activity on this port
	= Off	No link is detected on this port
Right LED (per port)	Solid green	The port is delivering PoE power
	Solid yellow	A PoE fault* occurred
	= Off	The port is not delivering PoE power

* PoE Fault condition: This might be a PoE-related short circuit, the power demand of the powered device (PD) exceeded the maximum level permitted, the current on the port exceeded the classification limit of the PD, or the voltage of the port is outside the range the switch permits.

Solution: Check the PD, restart the PD by disconnecting and reconnecting it. Check the cable. Try a different available port. Restart the PoE switch.

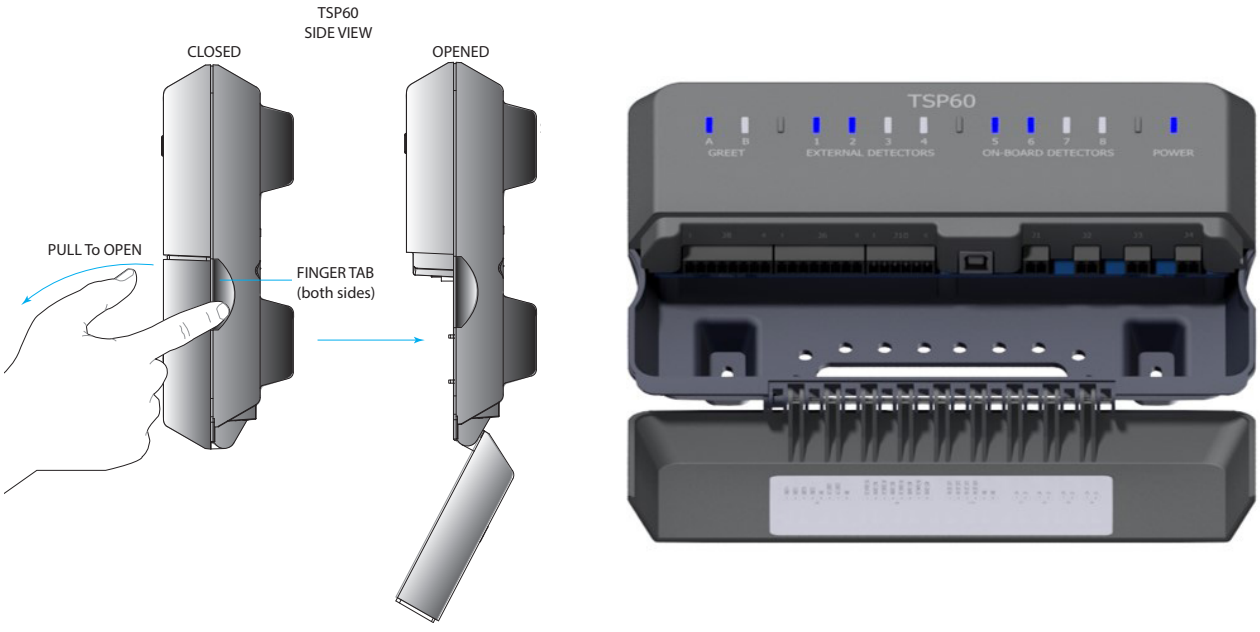
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The TSP60 status Lights (for systems using loop detectors)

If using loops, the following table provides an overview of the TSP60 status lights. Use it to help troubleshoot system issues. If a light does not behave as described, it may indicate a system issue. If you cannot resolve it with the information presented here, please contact HME Technical Support.

Light ID	Description/Function
Power Light On:	The TSP is connected to the CU and the CU powered on. Light Color: Blue. If the light is not on under these conditions, verify the USB cable connections and ensure the CU is powered on.
Power Light Off:	The TSP is not connected to the CU, or the CU is off.
On-Board Detector Light On:	The corresponding detector detects a vehicle. Light color: Blue. For example, if four onboard detectors are connected, the detector lights labeled 5 through 8 illuminate when vehicles are detected.
On-Board Detector Light Off:	There is no vehicle present over the detector, or no detector is connected (light not in use).
External Detector Light On:	The corresponding detector detects a vehicle. Light color: Blue.
External Detector Light Off:	There is no vehicle present over the detector, or no detector is connected (light not in use).
Greet Light On:	The Greeter/Order Taker is communicating with a customer. Light color: Blue.
Greet Light Off:	There is no active conversation between the Greeter/Order Taker and the customer, or the Greet detector is not in use.

If your system malfunctions, first open the TSP cover and check your connections. The following illustration shows how to open the TSP60. Also check the connections at the CU. Try disconnecting and reconnecting the interface cables between ZOOM Nitro devices, such as the USB cable between the TSP and CU. If the issue persists, restart the system using the CU power button (the TSP60 is powered by the CU).



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General Troubleshooting

Problem	Solution
Camera is not connected	• Refresh Camera • Refresh All Cameras • Check PoE link lights (See PoE Switch LED Reference Table) • Reboot PoE • Swap port • Swap cable • Replace camera • Call HME Technical Support
VPU is not online	• Verify VPU has power and is turned on. • Verify VPU is connected to the correct port • Verify the link lights are on at the VPU • Test the cable • Move the cable to different available ports • Check that the VPU IP address is correct • Call HME Technical Support
ZOOM Nitro is not online	Log in to the Zoom Nitro • Select the Network option and under the Local Network tab: o Verify the Control Unit Network is "Connected" o Verify the IP information is correct • Go to the HME CLOUD tab o Verify that it is turned ON o Verify the account email is correct o Verify that the Account Status is registered o Run Test Connection • If the test passes, reboot the CU and try again • If it fails, test cable and/or move the cable to different available ports (if assigned by the store's IT personnel)
Equipment will not power on	• Check Connections at equipment and outlet • Test the outlet using an electrical outlet tester o If the outlet passes, re-seat the cables and retry o If the outlet fails, move to a functional outlet
Cameras not showing on ZOOM Dashboard	• Verify that Zoom Nitro is online and connected to the HME CLOUD o If No, see "ZOOM Nitro not online" problem o If yes, continue • Verify VPU is online • Verify Nitro Vision AI is enabled and shows "Connected." If not: o Toggle the setting to disable. Wait 30 seconds, then toggle the setting to enable again o Click on "Refresh All Cameras"
Network requirements not passing	Confirm a dedicated port is used. Check network requirements with HME Technical Support

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Problem	Solution
Nitro Vision AI not working to show car movement	• Refresh cameras • Reboot VPU/system • Call HME Technical Support
Cable did not pass the test	If you can terminate the CAT 6 Cable • Inspect RJ45 ends for incorrect wiring, damage, or debris. o If debris exists, clean contacts and retry o If wiring is incorrect, cut, replace, and terminate new RJ45. If you cannot terminate the CAT 6 Cable. • Replace the cable if you have a spare one (the strain relief on the RJ45 cannot be molded when used with waterproof coupler) • Call HME for new cable.
Physical obstacle preventing access to camera location (indoor or out-door) Physical obstructions to camera view (e.g., trees, extended cooler, etc.)	• Can the obstacles or obstructions be moved, or can another mounting location be used? o Take photos of obstructions from multiple angles o Take photos of proposed new location you can access Forward the photos to HME for guidance on resolution
Poor detection in a zone	• Verify that the zone is drawn correctly (see zone-drawing rules) and captures the entire vehicle • Check for occlusions blocking car • Clean camera lens • Adjust camera viewing angle • Install camera in a more favorable location • Replace camera
Cannot save zones	• Clear red polygon error and See “Error Prompts when Configuring Polygons” on page 29. • Correct polygon issue and redraw zone according to rules

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GLOSSARY OF TERMS

CU: Control Unit/CU60, Part of the Timer system used with a Timer/TSP. It receives and processes lane event data from the TSP and then outputs this data for display in a visual format on the system monitor.

Delay: This field is found under Car Detection Settings>Configure Detector Mapping. If it needs to be adjusted, it sets the minimum time the car must remain in the zone before it is detected and processed.

Detector: A component of the Timer system. A sensor used to sense or capture the presence of a vehicle. These can be wire loops or cameras, or a combination of both.

Discard: This field is found under Car Detection Settings>Configure Detector Mapping. If it needs to be adjusted, it sets a time limit to verify that the vehicle present is a real customer and not an accidental trigger caused by a passing vehicle. Any triggers not meeting this time limit are discarded.

DHCP: Dynamic Host Configuration Protocol (DHCP) is a network management protocol used on IP networks. A DHCP server automatically assigns IP addresses and other network configuration settings to devices on a network.

DNS Server: Domain Name System (DNS) Server translates domain names (such as www.example.com) into IP addresses that devices use to communicate on a network.

Drive Off: This is when a vehicle is in line to order (pre-menu) but then decides to leave or drive off before placing an order. This can be due to long wait times or a change of mind.

Gateway: A device, typically a router, that connects a local network to other networks or the Internet.

HME CLOUD: This is a remote service that allows your system to securely access, store, and share data over the Internet. It can also provide remote access to other authorized systems connected to HME CLOUD.

IP Address: Internet Protocol Address. A unique computer address that some electronic devices (such as computers or routers) use to identify and communicate with each other on a network.

MAC Address: Media Access Control (MAC) Address. A unique identifier assigned to a network interface controller (NIC) for communication on a network.

Menu Stack: A default dashboard label that combines the Pre-Menu and Pre-Menu Stack zones into a single display label.

NTP: Network Time Protocol (NTP) is a networking protocol used to synchronize clocks between computer systems and network devices.

Nitro Vision AI: Is a vehicle detection method which utilizes cameras and proprietary AI technology to identify and track vehicles in a drive-thru lane environment or parking spaces designated for pick-up. Also see Zones.

Nitro Vision AI Accuracy Metrics: A definition of terms used in Video Detection metrics

- **Good Tracks**: Vehicles correctly identified and tracked throughout the entire Pre-Menu zone
- **Undetected**: A vehicle that enters the Pre-Menu zone but is not detected
- **ID Transfer**: A vehicle identifier is incorrectly transferred from one vehicle to another, typically due to occlusion
- **ID Loss**: A vehicle identifier is assigned but later lost before tracking is complete
- **Occlusion Related**: An error caused by an object obstructing the camera's view of a vehicle
- **False Positives**: The system detects a vehicle when no vehicle is present

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PoE: Power over Ethernet describes several standards that allow a single cable (twisted pair Ethernet cabling) to provide both data connection and electric power to devices such as Wireless Access Points, IP cameras, and Voice over IP phones, etc.

QSR: Quick Service Restaurant (QSR). A restaurant that specializes in the rapid preparation and service of food and often includes drive-thru ordering and pickup services.

Subnet Mask: A value used to define the network and host portions of an IP address, allowing a network to be divided into smaller subnetworks (subnets).

TSP: Timer Signal Processor (TSP). Part of the Timer system used to receive and sort data from peripheral detectors. It forwards this data to the CU for processing.

VPU: Video Processing Unit (VPU) A device that processes video data received from one or more cameras to support video analysis and display functions.

Web Server Port: The network port number used by NEXEO web services for network communication.

Whitelist/Allowlist - A list of approved devices, addresses, URLs, or other entities that are permitted access to a system or network.

Zones - These are specific areas of a drive-thru environment or parking spaces designated for pick-up that are targeted by Vision AI and defined on the VPU Setup page. Zones include:

- **Mobile space:** A designated parking space used for mobile-order pickup. Each space is treated as an independent detection area.
- **Extended Stack:** An area behind the Pre-Menu Stack zone where vehicles queue before entering the primary detection areas (Pre-Menu and Pre-Menu Stack zones).
- **Pre-Menu Stack:** An area behind the Pre-Menu zone where vehicles wait before reaching the order point and may still exit the drive-thru lane if they decide not to wait.
- **Pre-Menu:** The area immediately before the order point designed to accommodate a single vehicle, that is next in line to place an order.
- **Pull-Forward:** An area outside the primary drive-thru lane where vehicles wait for their orders. Used to enhance lane flow and reduce congestion.

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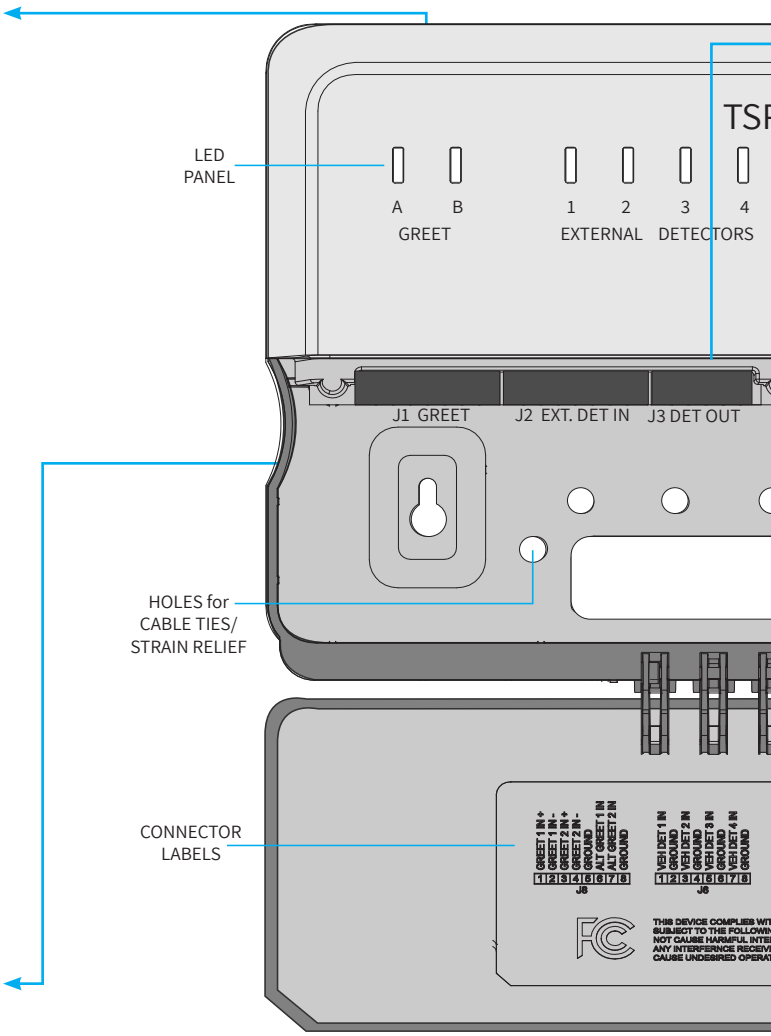
TSP60 WIRING CONNECTIONS

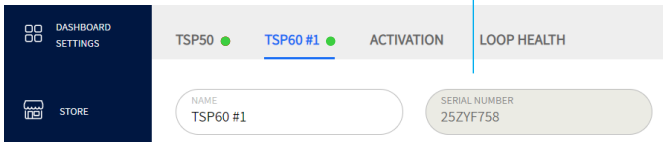
J1 Greet Inputs		
Pin #	**Label**	**Description/wire color**
1	GREET1+	From NEXEO Base Station: J800-1 or EOS Base Station: J6-8, +ve Outside Mic/Speaker wire. (Green wire)
2	GREET1-	From NEXEO Base Station: J800-2 or EOS Base Station: J6-7, -ve Outside Mic/Speaker wire. (White wire)
3	GREET2+	
4	GREET2-	
5	GND	Ground/Shield wire from either Base Station
6	/ALT_GREET1	
7	/ALT_GREET2	
8	GND	

J1 supports two greet signal inputs from the Base Station. Standard greet signals received from the audio lines (speakers) are terminated at GREET1 and GREET2 inputs. The ALT GREET 1 & 2 inputs are for digital inputs from other sources, such as using a headset button. Two greet signals is the maximum supported at the same time. Both can be from the same source or can be a combination of two sources such as GREET1 and ALT GREET2.

J2 External Detector Inputs		
Pin #	**Label**	**Description/wire color**
1	EXT_IN1/RLY_NO	From NEXEO Base Station: J800-7 or EOS Base Station: J1-4, +ve Menu Det. wire. (Red wire)
2	GND/RLY_COM	From NEXEO Base Station: J800-6 or EOS Base Station: J1-3, GND Menu Det. wire. (Black wire)
3	EXT_IN2/RLY_NO	
4	GND/RLY_COM	
5	EXT_IN3/RLY_NO	
6	GND/RLY_COM	
7	EXT_IN4/RLY_NO	
8	GND/RLY_COM	

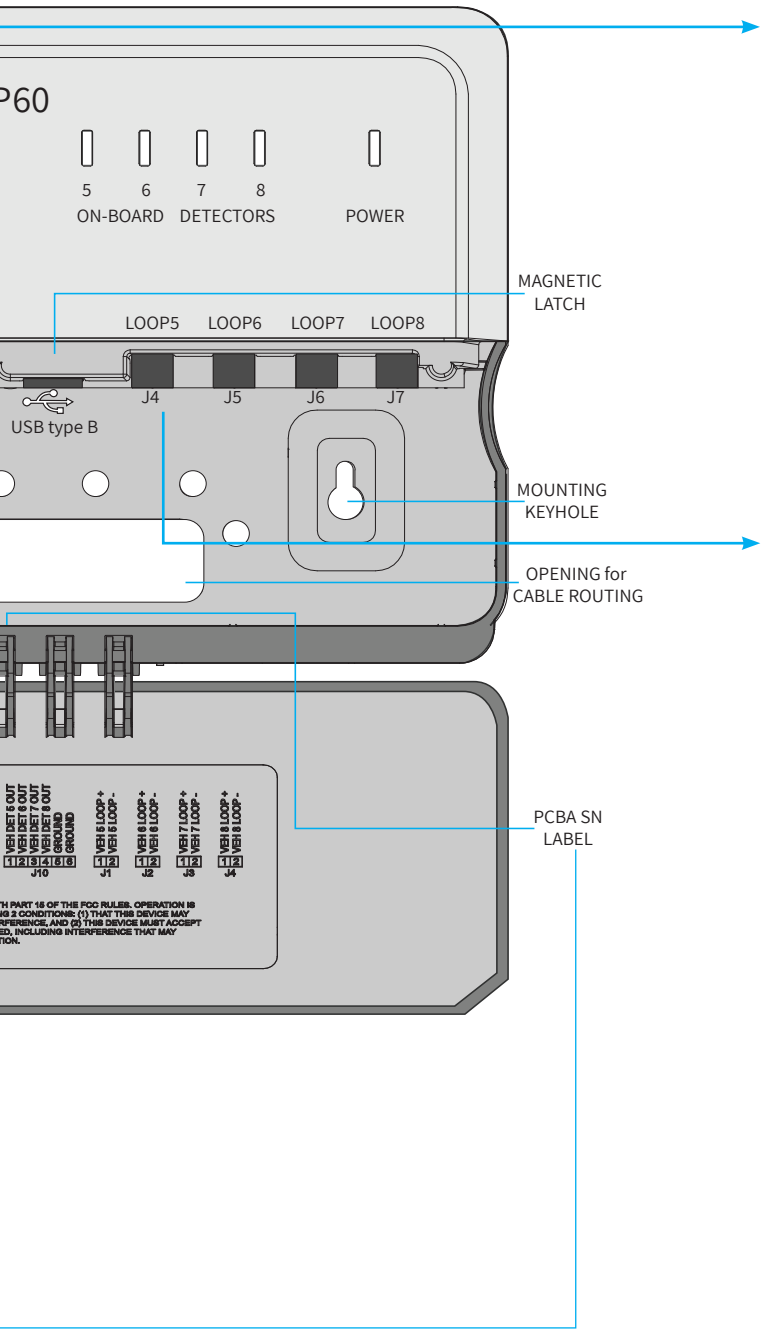
J2 supports four external detector inputs. These include both relay closure and logic-level signal inputs in support of non-HME, wireless or generic detectors, including positive polarity signal compatibility.





PCBA SN Label: This serial number identifies the TSP60 if more than one is used. It can be found under TSP SETTINGS>TSP60 on the ZOOM Nitro display (see Fig. 3.2).

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J3 Vehicle Detection Output		
Pin #	**Label**	**Description/wire color**
1	VEH_DET_OUT1	Output signal from LOOP5 (at J4)
2	VEH_DET_OUT2	Output signal from LOOP6 (at J5)
3	VEH_DET_OUT3	Output signal from LOOP7 (at J6)
4	VEH_DET_OUT4	Output signal from LOOP8 (at J7)
5	GND	
6	GND	

J3 is for Vehicle Detection outputs to the Base Station to support menu detection in the absence of an external VDB. These outputs are from the four Onboard detectors.

J4, J5, J6, J7 Onboard Detector Inputs		
Pin #	**Label**	**Description/wire color**
J4-1	Loop 5 +ve	Menu point/first detector loop in Lane
J4-2	Loop 5 -ve	
J5-1	Loop 6 +ve	Additional loop after first detection point
J5-2	Loop 6 -ve	
J6-1	Loop 7 +ve	Additional loop after first detection point
J6-2	Loop 7 -ve	
J7-1	Loop 8 +ve	Additional loop after first detection point
J7-2	Loop 8 -ve	

J4 is the default available onboard VDB for a direct connection. Connect loop/wireless detector input here. In addition to accepting a direct detector connection, these inputs (J4 - J7) can also be configured to support both relay closure and logic-level signal inputs.

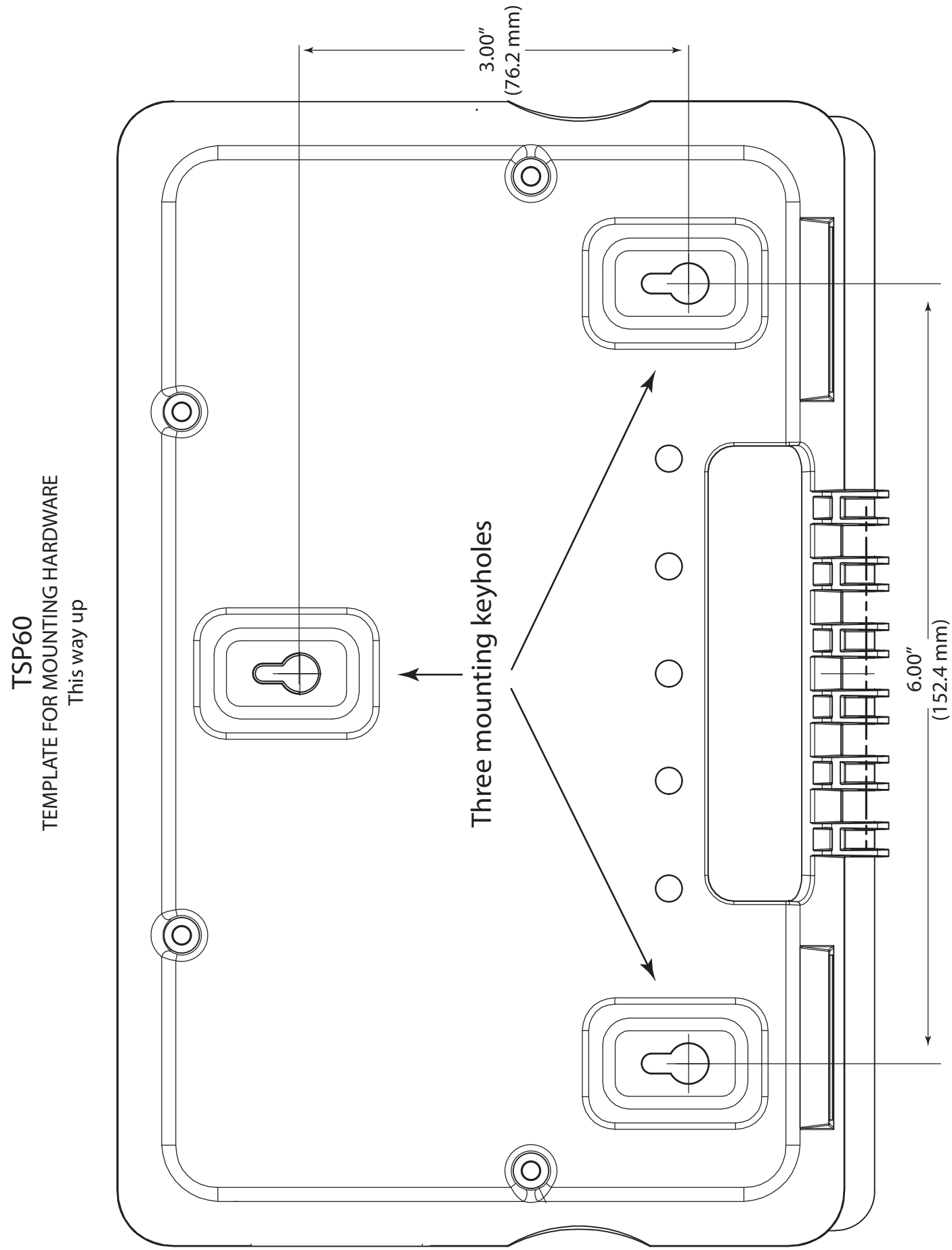
J5 - J7 requires activation to use (call HME at the phone number at the end of this guide for details).

LED state table	
LED	**Status/Description**
POWER	Solid Blue and always on if the CU is on and connected to the TSP
GREET	Solid Blue, only on when the host is speaking
EXTERNAL DETECTORS	Solid Blue, only on when a detector is connected, and a vehicle is detected at the corresponding detection point
ON-BOARD DETECTORS	Solid Blue, only on when a detector is connected, and a vehicle is detected at the corresponding detection point

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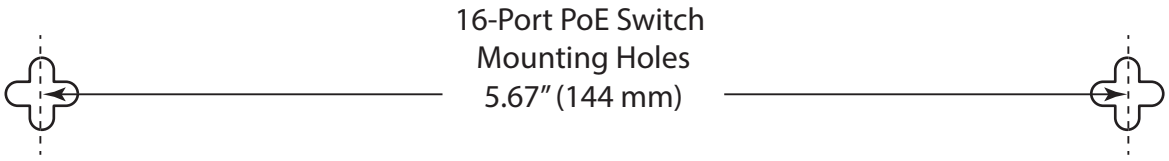
TSP60 TEMPLATE FOR WALL MOUNTING

When this page of the PDF is printed (to **actual size**), this template can help with the hardware placement.



POE SWITCH TEMPLATE FOR WALL MOUNTING

When this page of the PDF is printed (to **actual size)**, this template can help with the hardware placement. Below shows the 16-Port PoE switch mounting holes.



NOTES

Radio and Television Interference

FCC Regulation

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation. This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communication. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

Industry Canada (IC)

This device complies with Industry Canada license exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference received, including interference that may cause undesired operation of the device. This device complies with Health Canada's Safety Code. The installer of this device should ensure that RF radiation is not emitted in excess of the Health Canada's requirement. Information can be obtained at http://www.hc-sc.gc.ca/ewh-sem/pubs/radiation/radio_guide-lignes_direct-eng.php

"Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment."

Waste Electrical and Electronic Equipment (WEEE)

The European Union (EU) WEEE Directive (2012/19/EU) places an obligation on producers (manufacturers, distributors and/or retailers) to take-back electronic products at the end of their useful life. The WEEE Directive covers most HME products being sold into the EU as of August 13, 2005. Manufacturers, distributors and retailers are obliged to finance the costs of recovery from municipal collection points, reuse, and recycling of specified percentages per the WEEE requirements.

Instructions for Disposal of WEEE by Users in the European Union

The symbol shown below is on the product or on its packaging which indicates that this product was put on the market after August 13, 2005 and must not be disposed of with other waste. Instead, it is the user's responsibility to dispose of the user's waste equipment by handing it over to a designated collection point for the recycling of WEEE. The separate collection and recycling of waste equipment at the time of disposal will help to conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment. For more information about where you can drop off your waste equipment for recycling, please contact your local authority, your household waste disposal service or the seller from whom you purchased the product.



Installer Note

For ZOOM Nitro versions 6.2 and above, a new installer password is required. This password is available via the Installer Portal here: https://technicians.hme.com/Admin/Login?invalid

For ZOOM Nitro versions 6.0 and below, the old password can still be used.

A copy of this guide and much more can be found under ZOOM Nitro by scanning this QR code or going to:
https://www.hme.com/qsr/drive-thru-user-manuals/

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