Quick Start Guide: FlexNode Line Powered Radio (NA)

1 Assemble

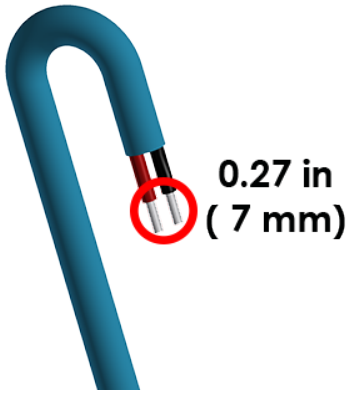
FlexNode Line Powered Installation Parts

A FlexNode Line Powered assembly requires a single FlexNode Line Powered and the mounting kit.

Prepare Mounting Location

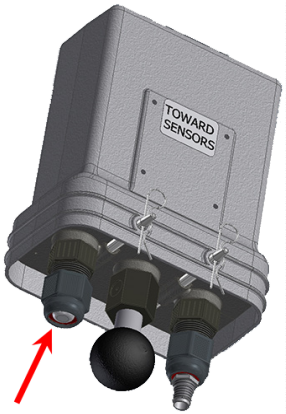
Pull the power cable (not provided by Sensys Networks) through the conduit to mounting location for the FlexNode Line Powered. Ensure the power cable is not connected to the power source. Make sure the power cable has enough slack for drip loop. Assemble the mounting plate onto the pole. Attach mounting arm to mounting plate. Complete the remaining assembly steps for the FlexNode Line Powered inside the bucket before attaching it to mounting arm.

Please refer to *Repeater Installation Guide* for detailed instructions for mounting assembly.



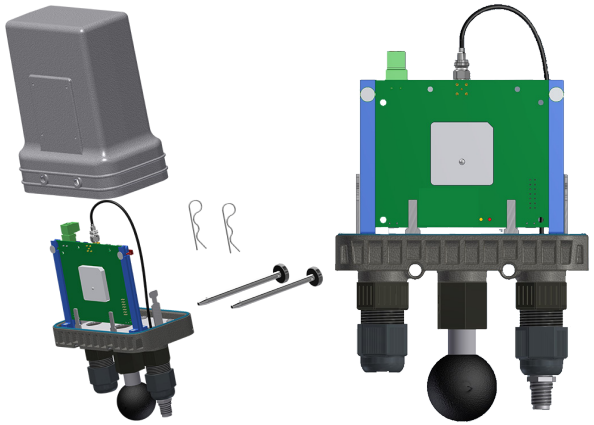
Strip Wires

Strip the wires to expose approximately 0.27 in (7 mm) of the conductor from the power cable to prepare for connecting to green terminal block inside repeater.



Remove Plug

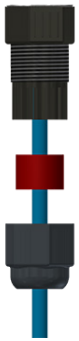
Remove the bulkhead connector and remove and discard the plug.



Pull Cover Off Repeater

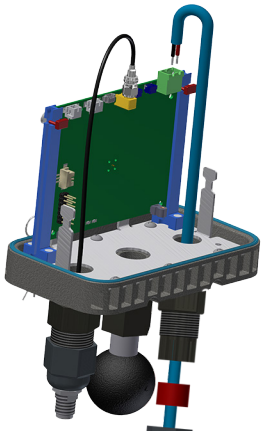
Remove reusable cotter pins and pull out both retention rods. Remove the FlexRepeat3 Line Powered cover.

Assemble (cont.)



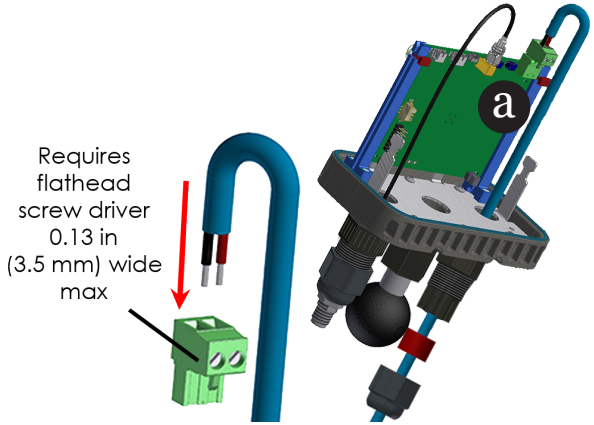
Assemble Bulkhead Connector

Assemble bulkhead connector from the FlexRepeat3 Line Powered onto the power cable.



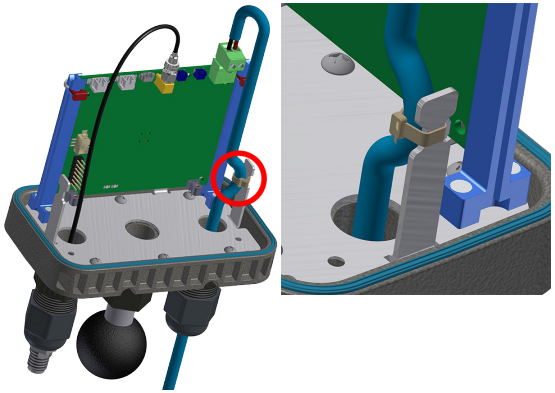
Thread Power Cable

Thread the power cable through the repeater to reach the green terminal block.



Connect Stripped Wires to Green Terminal Block

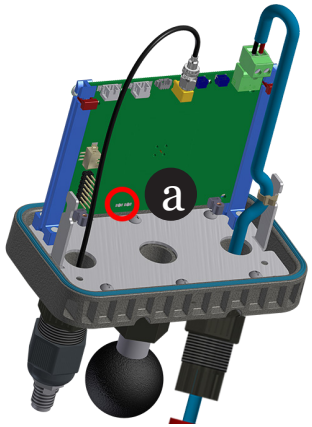
Unplug the green terminal block from (a), then thread the stripped wires into the green terminal block and tighten screws to fit snuggly with a small flat head screw driver. The terminal block has **NO POLARITY** requirement (either wire can go into either location). Plug the assembled terminal block back into its original location.



Cable Strain Relief

Use a cable tie to attach the power cable to one of the metal prongs on the FlexNode Line Powered to provide strain relief and trim off excess tie.

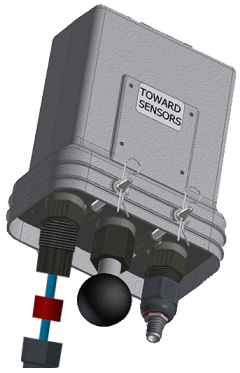
Note: The cable tie head must face inwards to allow assembly of the FlexRepeat3 Line Powered cover.



Connect to Power Source

Connect power cable to the power source. Wait approximately five seconds for LED lights to blink on the circuit board to ensure unit is turned on (a).

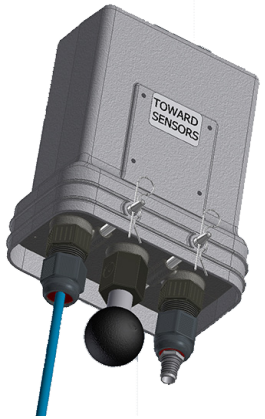
Assemble (cont.)



Slide Cover On and Secure Rods

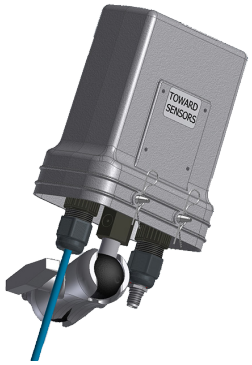
Carefully slide cover on top of FlexNode Line Powered over base. Cover will only be able to fit one way, flip cover if it does not slide down completely. Insert retaining rods from the rear side until rod head is flush against cover and the end of the rod fits into the receiving hole. Insert reusable cotter pins into holes at the end of the retaining rods to lock in rods.

Note: Orient the flat rod heads on the same side of the cover with the raised rod hole ridges.



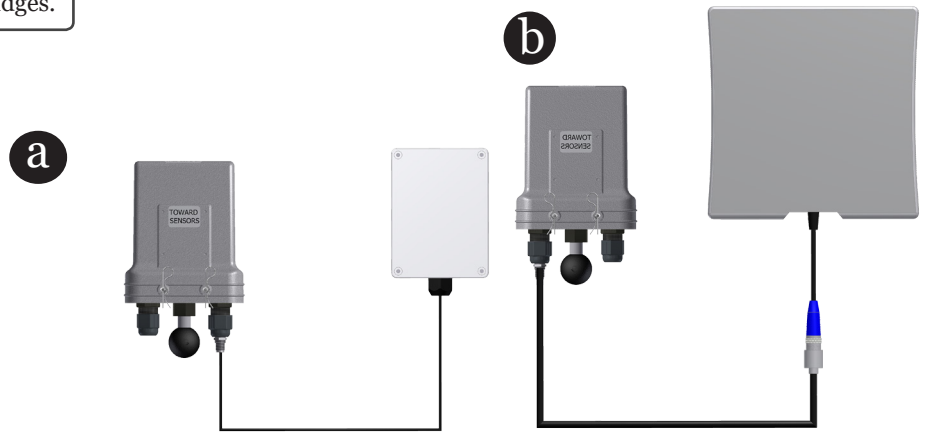
Secure Bulkhead Connector to FlexNode Line Powered

Secure bulkhead connector to the FlexNode Line Powered bottom.



Mount FlexNode Line Powered

Attach the FlexNode Line Powered to the mounting arm with the *Towards Sensors* side facing the sensors and the access point. Note that the mounting arm can be oriented to adjust the location of the FlexNode Line Powered. The FlexNode Line Powered can also operate with an optional external antenna.



Connect External Antenna (Optional)

Remove the cap from the TNC connector. Connect to one of the External Antenna options with a coax cable. Two options are supported: (a) the FLEX-ANT-1 with the same RF range as the internal antenna and (b) the FLEX-ANT-2 with Long Range RF range. Point the external antenna towards the sensors. The roles of the internal and external antenna can also be switched.

2 Connect to Access Point

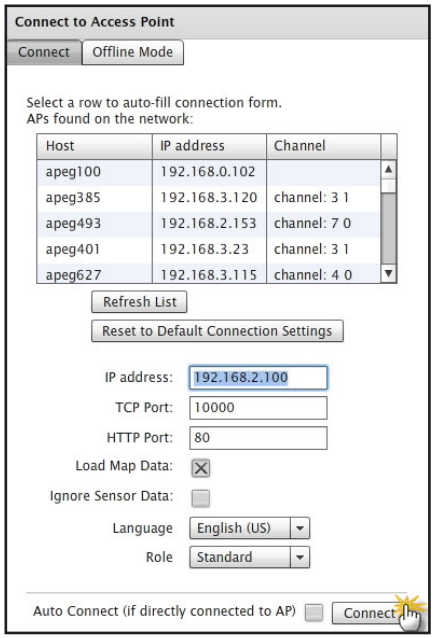
Run TrafficDOT

Click the icon to start TrafficDOT2.

Select IP address

Select an access point from the list of APCCs and Access Points and click **Connect**.

Note: Ensure the box for *Load Map Data* is checked before clicking **Connect**.



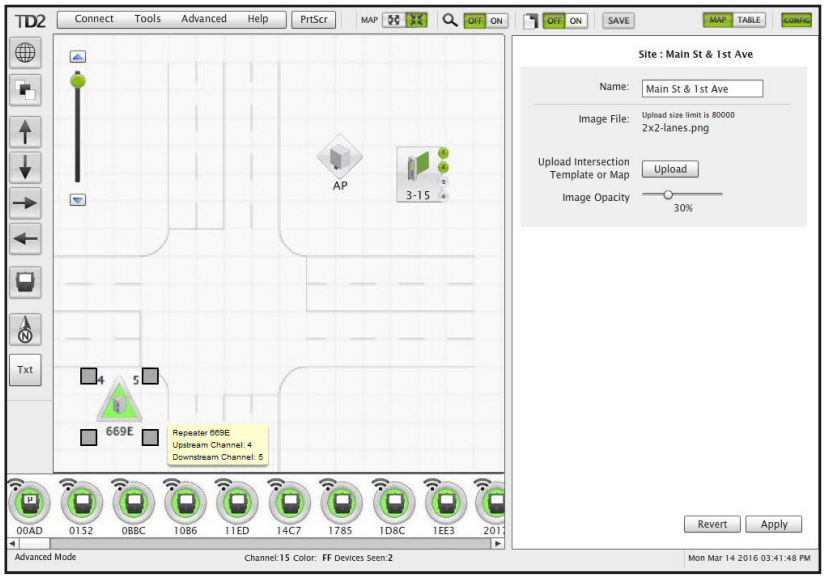
Requirements

FlexNode Line Powered requires TrafficDOT2 software 2.12.0 or later.

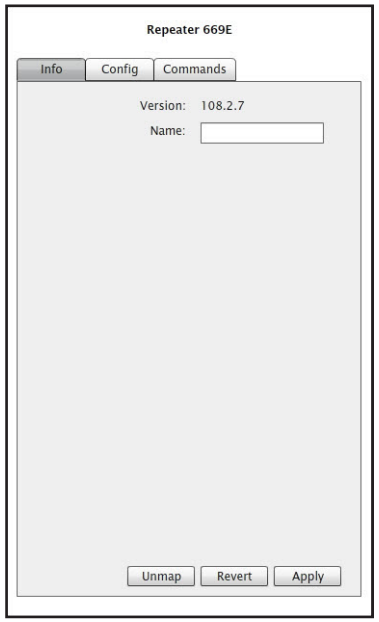
Main Window

The *Main* window displays. The map on the *Main* window populates and configured equipment appears on the map and in the sensor tray at the bottom of the window.

Note: Before configuring or reconfiguring a repeater, ensure the correct repeater is selected on the map by verifying the serial number.



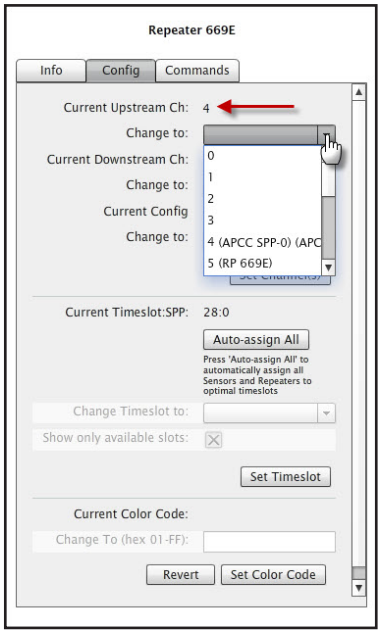
3 Configure Repeater



Repeater Configuration Window

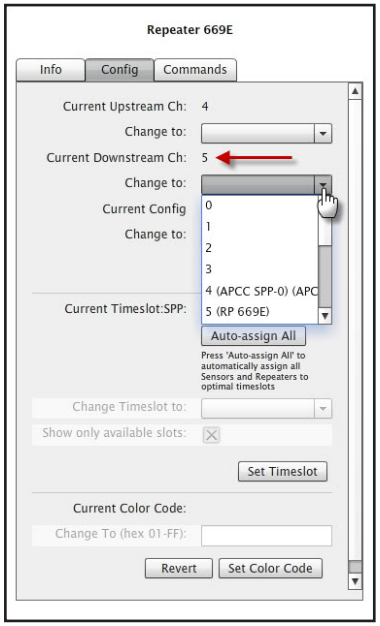
Select a repeater from the image map to access the *Repeater Configuration* window with the *Info* tab open. The *Name* field allows the repeater's name to be user-defined.

Note: Repeater's firmware version is for reference only.



Specifying Upstream Channel

Select an upstream channel by clicking the **Config** tab. Select an entry for the *Current Upstream Ch* field by clicking on the *Change to* drop-down list.



Specifying Downstream Channel

Select a entry for the *Current Downstream Ch* field by clicking the *Change to* drop-down list.

Channel Notes

- The default radio channel for access point to repeater communications is 4.
- The default radio channel for repeater to sensor communications is 5.
- Never use the same channel for both access point and sensor communications.

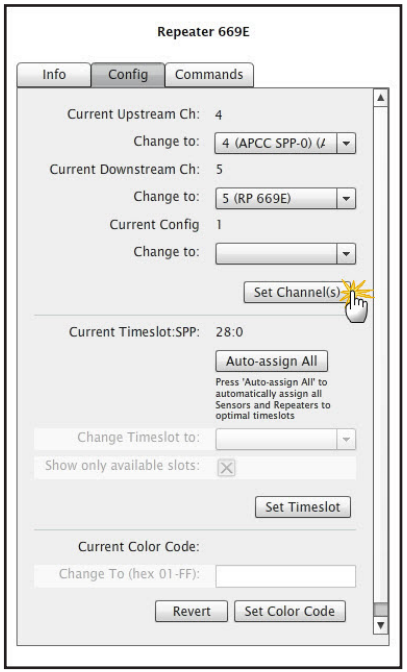
Refer to *Sensys Network VDS240 Wireless Vehicle Detection System TrafficDOT Set Up and Operating Guide* for more information.

Config Notes

- When an installation contains multiple repeaters with more than 20 sensors, changing one or more repeaters from *Current Config 0* to *Current Config 1* allows the access point to communicate with up to 40 sensors through the repeaters.

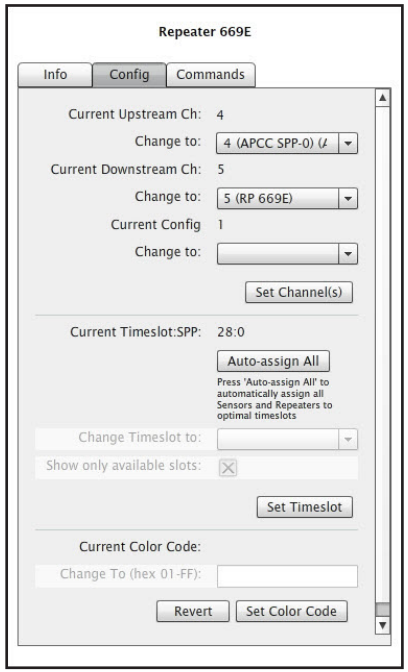
Refer to *Sensys Network VDS240 Wireless Vehicle Detection System TrafficDOT Set Up and Operating Guide* for more information.

Configure Repeater (cont.)



Save Configuration

Click **Set Channel(s)** to accept configuration changes.



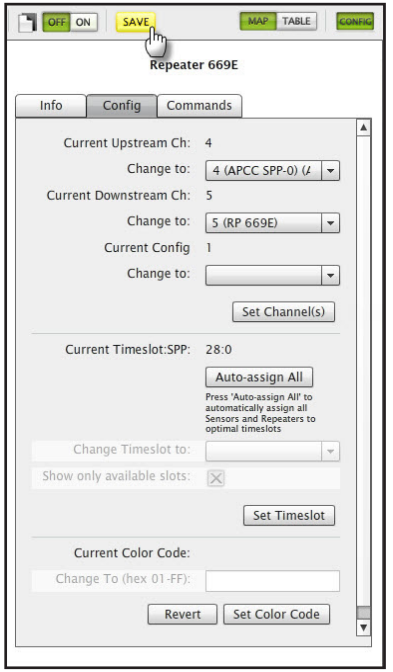
Specifying Time Slot

Click the **Auto-assign All** button to automatically assign all Sensors and Repeaters to optimal timeslots.

Note: The grayed out options can be made accessible by enabling *Advanced Mode* using the *Advanced* drop-down menu.

To manually set the time slot, TrafficDOT filters the contents of the drop-down list so that only available time slots are displayed. Click an entry from the *Change Timeslot to* drop-down list and then click **Set Timeslot** to accept changes.

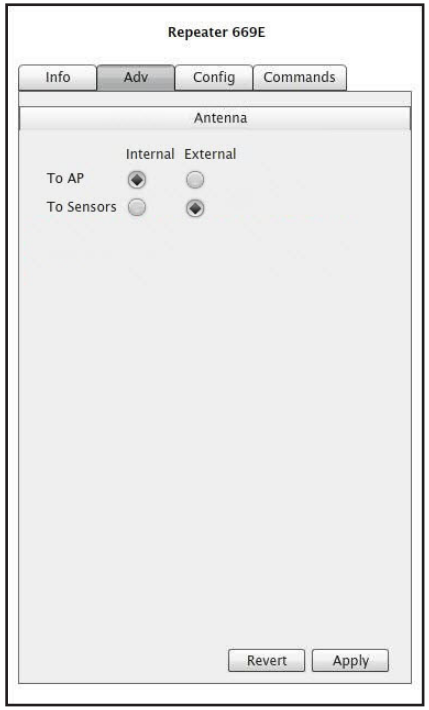
To change the drop-down list to include all time slots in the network (both assigned and unassigned), remove the check in the *Show only available slots*.



Save Configuration

Click **SAVE** to save changes made to the access point.

Configure Repeater (cont.)



Adv Tab

If the repeater is connected to an external antenna, then it can be configured via the *Adv* tab. From the *Antenna* panel, select either *To AP* or *To Sensors* to configure an internal/external antenna.

Note: Recommended setting for external antenna is *To Sensors*.

Save Configuration

Click **Apply** to accept configuration changes.

Click **SAVE** at the top of the screen to save changes made to the access point.

Adv Tab Notes

- A failsafe error message occurs should you choose the external antenna option when there is no external antenna installed.
- If FlexNode Line Powered is installed with or without the external antenna, and the *Antenna* panel options are left unchecked, the internal antenna is used for both *To AP* and *To Sensors* channels.
- If *Discover Mode* is not ON the following warning will display: *Advanced setting values shown are either not set or last known current value because discover not on. Value(s) will not be updated until discover turned on*.
- If *Discover Mode* is OFF at connection time for TrafficDOT the *Adv* tab displays *Not Set* values. Turn *Discover Mode* ON for true values to display.

Refer to *Sensys Network VDS240 Wireless Vehicle Detection System TrafficDOT Set Up and Operating Guide* for more information.