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1. Using the Polara Field Service App for Android

All of the available setup and maintenance procedures may be performed using a compatible Android device. The device must have Android version 5.0 (Lollipop) or higher.

We have tested the Polara FS app on a number of Android devices, but we cannot guarantee that it will function properly on all devices. We have tested the app on a number of Samsung phones including the Galaxy S5, Galaxy S7 and Galaxy S8, Galaxy Note 4, Google Pixel (1), LG K20+, LG V20. A small number of devices we have tested have unsupported Bluetooth capability and are unable to connect via BLE: Motorola Moto E4, Kyocera Duraforce XD.

We have also tested the app on a few Tablet devices such as the NVidia Shield K1 and Asus ZenPad S.

The app is not compatible with any Amazon Fire devices.

The Polara Field Service application is available free in the Google Play Store. Search for Polara and locate the app, then tap the install button.

1.1 Bluetooth Connection

Before starting the Polara FS App, make sure your Android device has Bluetooth turned on in Settings. Then, start the app. This will display a list of all available devices. Tap a name to select the device to connect to. When the password prompt appears, type in the password (factory default is 1234) and tap connect. Once logged in, the main menu will appear.

The connection procedure differs slightly depending on which Android device is in use. The below has three examples of typical connection behavior.
1.1.1 Connection Example: Samsung S7 running Android 7.0

The most straightforward behavior shown below:

Tap on the BTLE device upon which to connect. After a few seconds, the password prompt will appear.
1.1.2 Connection Example: Google Pixel running Android 9.0

On some of the newer devices running the latest Android versions, once you tap on the BTLE device for connection, a Pairing request will appear. Tap on Pair & Connect, and then another confirmation box may appear. Tap pair on the confirmation box and then after a few seconds, the password box should appear.
1.1.3 Connection Example: Nvidia Shield K1 Tablet running Android 7.0

On some devices such as tablets, the busy indicator will appear in the center of the screen, but it will not appear to pair. In order to connect, you must swipe down to view the notification center and see if there is an item listed as a Pairing request. Tap the pairing request and then a pairing confirmation dialog should appear. Tap the Pair button and then the password prompt should appear.
### 1.2 PBS Status

On this PBS Status screen, the information is shown live from what is occurring in the PBS.

Tapping on the Flash LED button will flash the pilot LED on the PBS for a few seconds.

<table>
<thead>
<tr>
<th>PBS NAME / VERSION</th>
<th>PBS INTERVAL</th>
<th>PED CALL / BTN PUSH</th>
<th>FLASH LED</th>
</tr>
</thead>
<tbody>
<tr>
<td>*IN3_ES v3.206</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
1.3 Changing the PBS Password

Each unit will require that the password be changed from default in order to avoid the repeating “Change Password” voice message. To change the password, scroll down on the menu under the PBS Configuration category and choose Password. Enter in the appropriate fields: the current password, new password, and retype new password. Then tap the Save button in the upper right corner of the screen. This will update the password in the unit. Once the password has been updated, the screen will clear. Open the main menu (via the three lines in the upper left corner or swipe your finger in from the left of the screen), then choose another task to exit the password screen.
1.4 Assigning a Name to a PBS

Each PBS may be given a name to help identify it while performing configuration and updates. You may want to use a name that will include the location. From the main menu, select the Button Info/Diagnostics option on the bottom of the menu. Then tap the Rename button to rename the unit.

1.5 Setting the PBS Time and Date

While viewing the main menu, tap on Date/Time option. Tap to choose a method of obtaining the time, then tap on the three dots on the upper right corner of the screen and tap “Save” to update the PBS clock.
1.6 PBS Configuration Options

From the main menu, tap the Settings item under the PBS Configuration category. This presents an extensive list of operational settings that may be adjusted according to desired operation. You can swipe the list up and down to find the setting to be changed.

Tap the setting to access the options for that setting. Make your value changes and tap OK to confirm the new value or CANCEL to proceed without any change. Tap the INFO button for more information regarding the setting.
Options for selecting sounds have a button with a speaker symbol. To listen to sounds, use the slider to Enable Audio Playback or press the icon next to the sound you wish to hear. For safety, the unit will need to go into Maintenance Mode and the LED will perform a three-flash pattern. Press Yes to enable Maintenance Mode. In this mode, the unit’s main button will not operate or respond to interval changes so a pedestrian cannot use it. This will only be done on the iN2 unit you are directly connected to, so a remote button cannot be made to play a walk sound and confuse a pedestrian.

Tap the speaker symbol to listen to the selected sound. Sounds will play out of the PBS’s speaker. Turn off the Enable Audio Playback switch to resume the unit’s normal operation.

When you are finished selecting desired settings, tap the Write button to write the settings to the connected button. Alternatively, tap the menu symbol at the top right to access additional options.

After saving new settings to buttons, walk the entire intersection to test each PBS for proper operation to verify that the new settings work as intended.
The currently displayed settings may be saved to a file and recalled for later uploading to other PBSs. Tap the three dots in the upper right corner to display the action menu and tap "Save As File" and enter a file name to create a file.

Tap “Load From File” to browse previously saved configuration files. Tap a file name and then tap OK to load the settings into the settings list. Then tap WRITE to save settings to the PBS.

Note: The configuration files only save the PBS Settings listed on this screen and does not apply to additional parameters on other screens such as Quiet Time or Wireless Sync and also does not save audio files. Audio files must be extracted and uploaded separately.

While in the File Browser, you can delete files, if necessary. To delete files, swipe from the right to the left. You can also export the file for use in other apps by tapping the E-MAIL button. The configuration files are the same between all apps (iOS, Android, & PC) and can be used interchangeably.
1.7 Quiet Time

The iN3 PBS has a feature to easily allow the button to become quieter at a specified time of day. This is useful, for example, when a residential street experiences a lot of traffic during the day, but very little in the evening. In this scenario, it may be useful to have the iN2 PBS set loud enough to be heard over traffic during the day, but be nearly inaudible in the evening hours, as not to disturb residents living nearby. Quiet Time allows for a reduction in volume between a specified time interval, within a 24-hour day. The details of the feature's operation are such that if the current time of day falls between the selected start and end time of the Quiet Time period, then all Minimum and Maximum volume settings will be reduced by the specified reduction amount.

Note: The "Minimum" volume setting can be reduced down to 0%, but the "Maximum" volume setting will only be reduced down to 25%. This follows what is settable in the configuration parameters or settings screen.

The table below shows what the effective volume settings would be with the Quiet Time set to reduce the volume by 30%. With the values set as shown in the screenshots, between the hours of 9:00am and 7:59pm, the volume will be as set configured in settings (shown in the “set value” column). At 8:00pm to 8:59am the following morning, the volumes will be reduced as shown in the “reduced value” column:

<table>
<thead>
<tr>
<th>Setting Name</th>
<th>Set Value</th>
<th>Reduced Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Locate Volume Minimum</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Locate Volume Maximum</td>
<td>50%</td>
<td>25%</td>
</tr>
<tr>
<td>Information Message Minimum</td>
<td>65%</td>
<td>35%</td>
</tr>
<tr>
<td>Information Message Maximum</td>
<td>100%</td>
<td>70%</td>
</tr>
<tr>
<td>Std Walk Minimum</td>
<td>30%</td>
<td>0%</td>
</tr>
<tr>
<td>Std Walk Maximum</td>
<td>60%</td>
<td>30%</td>
</tr>
<tr>
<td>Ext Walk Minimum</td>
<td>60%</td>
<td>30%</td>
</tr>
<tr>
<td>Ext Walk Maximum</td>
<td>80%</td>
<td>50%</td>
</tr>
</tbody>
</table>

From the PBS Configuration section of the Main Menu, select Quiet Time. Turn the Quiet Time switch On, then enter the desired settings, then tap the Save button.
1.8 Wireless Sync

Use this feature to configure PBS to PBS wireless links for units that do not have PED call wiring to the traffic signal controller. This function provides a link between PBSs on the same PED phase such that a button press on one unit enables the Walk and Clearance sound on the other units. Both standard and extended push status is transmitted.

When the Wireless Sync feature is active, the PBS will not accept Bluetooth connections via an iOS device or PC. However, 5 seconds after an Extended Push, the PBS will accept connections until the start of the next Clearance cycle.

Tap on the Wireless Sync option in the main menu.

Enable this function by tapping the 'Wireless Sync' switch at the top of the screen.

The Intersection ID is used to prevent any possible interference between nearby intersections which are also using this feature. Tap the 'Intersection ID' box and enter a number between 0 and 65535 and tap ‘OK. Any number is acceptable as long as it is different from that used on any nearby intersection. In the same manner, enter the PED phase number for this PBS. Each PBS should be configured using the same procedure. PBS units with the same Intersection ID and Phase numbers will exchange button push information.

When the Remote Ped Call option is enabled, if that unit receives a button push indication from a Wireless Sync transmission, then it will also cause a Ped Call indication in the form of a contact closure on the terminal block wires to the traffic cabinet. This can be useful if one side of intersection has button wires to the traffic cabinet but the other side does not. Then any button pushed form the unit without wires can transmit the button press status wirelessly to the other unit causing a Ped Call to be asserted. In this situation, only the units with button wires going to the traffic cabinet should have this option enabled.
1.9 Preparing Audio Files

The audio files which are played in the iNav units are encoded using the open-source Ogg Vorbis codec. Polara provides professionally recorded custom audio files on the website. Go to Polara.com and click on the Audio Library option. You can search for audio files which have already been recorded if the streets on the desired intersection are common. However, you can also request to have messages recorded for you by clicking on the Request Custom Message option and filing out the form on the website.

If you wish to record your own messages or already have messages in another format (such as .wav or .mp3), these messages can be converted to the specific Ogg Vorbis format needed by the iNav devices by downloading the Intelligent Config application (also available on the Polara.com website) and using the Convert Audio option.

Once you have your .ogg files prepared, they must be transferred onto your Android device. There are multiple ways to accomplish this. The below are a few ways of transferring the files.

- Send the files as an e-mail attachment to an account on your Android device.
- Use the USB cable connected from the Android device to your PC and transfer the files directly to the device’s file system.
- Copy the files to the microSD card of the Android device.
- Download the Polara.com files using the web browser on the Android device.

Any of these methods can be used as long as the .ogg files appear in the file browser of the Android device. An easy location would be to copy these to the Downloads directory on the Android device for easy retrieval.
1.9.1 Opening .ogg files as an e-mail attachment

If you have sent the files to an e-mail account that is associated with your Android device, open the e-mail to view the attachments.

Tap on the main part of the attachment (not the download arrow or the Google Drive icon). You should be presented with the Open With popup. Tap on Polara FS to import the file into the Polara Field Service app.
1.9.2 Opening .ogg files via Android File System

If you have downloaded the .ogg file into the Android device’s file system, open a file browsing application. The application will vary depending on the device. On Samsung devices, this is the My Files application.

Example: Samsung Galaxy S7
Using the Samsung My Files application to import .ogg files into the Polara FS app.

Example: Google Pixel
Using the ES File Explorer application to import .ogg files into the Polara FS app.
1.9.3 Browsing for .ogg files via Polara FS App

If you have .ogg files stored in your Android device’s internal or SD card memory, you can import it directly using the Polara FS app file manager. Open the Polara FS app and select the File Manager option from the main menu.

Tap the three dots in the upper right corner of the screen and select Browse to Import Files.

You will be presented with a file browser. Browse to the location with your saved .ogg files, and then tap on one of the files to import it. Repeat the process for each file to import.
1.10 Updating Audio Files

From the main menu, tap on the Audio Update option.

To add a new Information Message file, tap on "Information Message". This displays a list of available voice files loaded into the Polara App. Tap on the name of the file you wish to load as the Information Message sound in the PBS. Then tap the OK button.

Note: Files ending with the suffix VOL should be loaded as an Information Message and files with the suffix WALK should be loaded as Custom Walk.

Tap OK on the confirmation box and the file will begin uploading. Once the file has completed uploading, you will be returned to the Audio Update screen.
Repeat this process for each file to be uploaded. Typically, a custom set will include two files, one for Information Message and one for Custom Walk #1. To enable these new custom files, go to PBS Configuration Settings and set the Information Message option to “Custom”, and set the Walk Mode Sound option to “Custom Walk #1”.

**Finish by walking the intersection to confirm the system is both operating properly and playing correct messages.**

Additional sounds can be modified for specific circumstances. The following view shows the additional sounds that can be uploaded using the Android app.

If additional audio sound customization is required beyond what is listed in the Audio Update screen, use the Intelligent Config PC Application for more audio upload options, including adding additional second language audio files or replacing Countdown files. An iN-DGL dongle is required for connection to an iNav unit using the PC. Contact your distributor to obtain an iN-DGL if you do not already have one.
1.11 Extract Audio Files

The same messages that are available to be changed via Audio Update can be extracted from the PBS. This feature requires firmware version v3.199 or greater in the iNx unit.

While in the Audio Update screen, tap the three dots in the upper right corner and select Extract Audio.

All options on screen should change to add the word “Extract” to the front to indicate that you will be extracting the selected message from the unit.

It is recommended that you listen to the message on the unit prior to extracting it so you know how the message should be named. Perform an extended push on the unit to hear the Information Message and then wait to hear the Walk message, or use the sound play feature in the Settings screen.

To extract the Information Message, tap the Extract Information Message option.

You will be prompted to add a filename for the extracted file. Name the file appropriately for the intersection streets. For example, the intersection of Broadway and Main would have an information message named “Broadway_Main_VOL” and the corresponding walk message would be “Broadway_WALK”.

Tap OK to begin extraction.

Once extraction is complete, you can extract additional messages from the unit or tap the three dots in the upper right corner and select the Upload Audio button to switch back to upload mode.

You can view the extracted messages by selecting the File Manager from the Main Menu. Tap on one of the .ogg files to bring up the action menu. From there you can play the sound and hear it from the Android device’s speaker or e-mail/export the file.
2. Using the Polara Field Service App to Access the Health Log

2.1 Accessing the Health Log

The Health Log contains a list of events, including both normal conditions and error conditions. Each PBS maintains a separate log. These can be very useful for troubleshooting.

Tap the box for “Health Log” at the Polara App main menu. Tap the “Read” button to begin retrieving the health log from the connected iN3 unit. The log is downloaded and displayed. Swipe the screen to browse through the log. Tap the menu symbol at the top right to access a list of actions. The menu symbol is shown as three dots. You can choose to clear the log, export the log to an email address, or view the log file as text in another external application. For help with a particular issue, or a message of concern, email the log to support@polara.com.
3. Getting Button Info and Diagnostics

The Button Info/Diagnostics page in the PBS Configuration section of the main menu shows additional details about the iNav unit.

- Press the Rename button to change the units name that appears when searching for devices during connection.
- To view a list of all information and settings configured for a unit, tap the View All Unit Information button. This will display detailed information about all factory and user-settable settings. Note: This information is also prepended to the health log when exported to file.
- The Reboot PBS button will cause a soft-reset of the unit.
- Pressing the Run Diagnostic button will perform a self-test of each of the listed items and return a Pass/Fail result. This does not absolutely mean that the unit is functioning perfectly, but that the software does not detect any abnormalities in the data or responses from the specified test.
4. Using the Polara Field Service App for Firmware Updates

4.1 Checking for the Latest Firmware

Firmware files are automatically bundled with the Polara Field Service App. The latest firmware at the time of App release is ready and pre-installed for updating.

The Android App also has the ability to connect to polara.com to check for new updates directly from within the App. Your device must be connected to the internet in order to perform the check. This can be done while connected to a unit or while working without a Bluetooth connection. Tap on the File Manager option in the main menu to browse all files on your Android device. Tap the three dots in the upper right corner of the File Manager screen. Tap the Check For Updates button. The device will connect to the internet and check for the latest firmware files from polara.com and provide them for download. You can tap on View Release Notes to see what the changes are from the previous version or tap the Download button to download the file to your device.

Firmware files to be uploaded can also be received using the same methods used to transfer .ogg files to the Polara FS App. Follow the same instructions as in section Error! Reference source not found. to import the files.
4.2 Performing a Firmware Update

To perform a firmware update, tap Firmware Update from the main menu. On the firmware update page, you can view the current firmware device you are connected to. Tap the Update Firmware button. The list of available firmware update files will appear. Tap the file you wish to upload and tap OK to begin the select the file. Tap OK on the confirmation dialog to start the update process. When the process is complete, a message is displayed confirming update success.