Wi-Fi Provisioning via Bluetooth LE

09:41

Wi-Fi

nRF 7C SERIES

The application allows provisioning of a new nRF700x device to Wi-Fi networks over Bluetooth LE.

Key features:
• Provision of a new device to the desired network.
• Get the connection status of the provisioned device.
• Re-provision already provisioned devices to an alternate network.
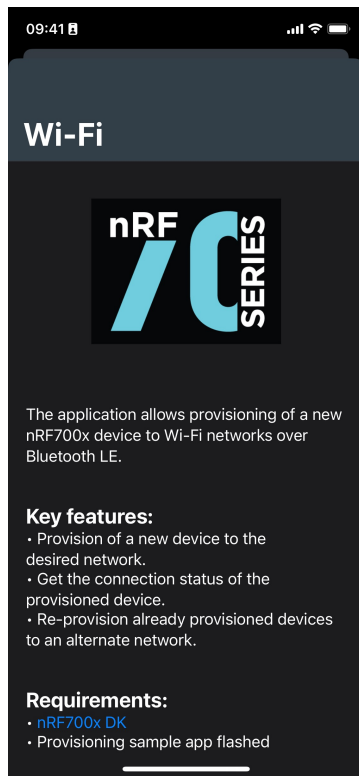
Requirements:
• nRF700x DK
• Provisioning sample app flashed

The provisioning App (Provisioner) works with Nordic nRF700x Wi-Fi devices (Device) and helps them to connect to the desired Network selected from this App via Bluetooth LE. The essential operation is as described below –

1.   The device advertises its presence and a unique UUID via BLE adv channels

2.   Provisioner scans for this UUID, pairs with the device, and establishes a LE Secure channel which will be used from hereon to exchange information

3.   Provisioner asks the device to scan its surroundings for Wi-Fi Access-Points/Routers and send the results.

4.   Provisioner selects the Wi-Fi network and sends the provisioning data for that network to the device, which then uses that data and connects to that network.

5.   Provisioner can re-provision a device to move it to a different network

6.   Provisioner can get the status of already provisioned devices

Permissions please…
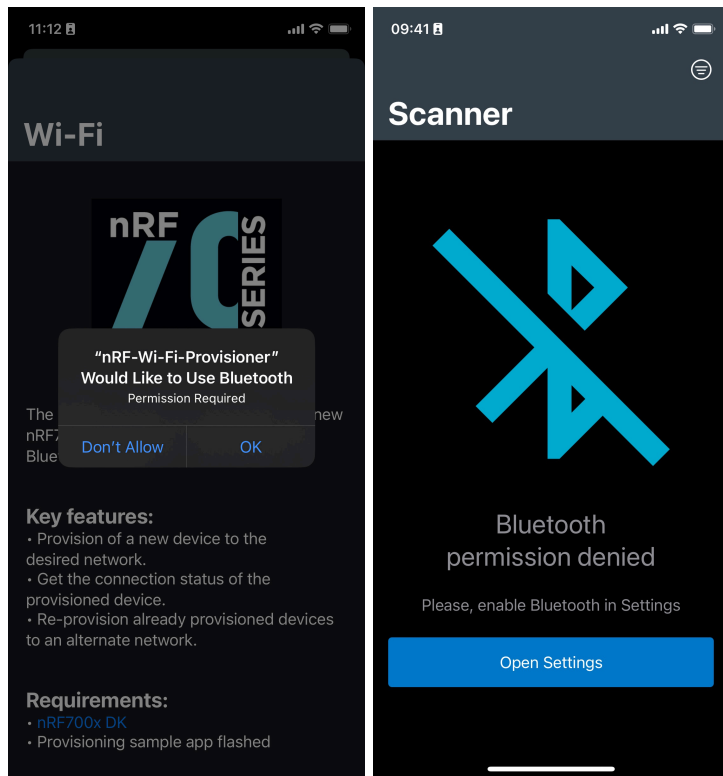
- To discover and connect the devices, you have to give Bluetooth permission.

- The permission dialog will appear on the first launch

- To start scanning and for Bluetooth devices, just press "OK"

- If you don't allow permission, you can always do that in the settings.

BLE Scan of Devices
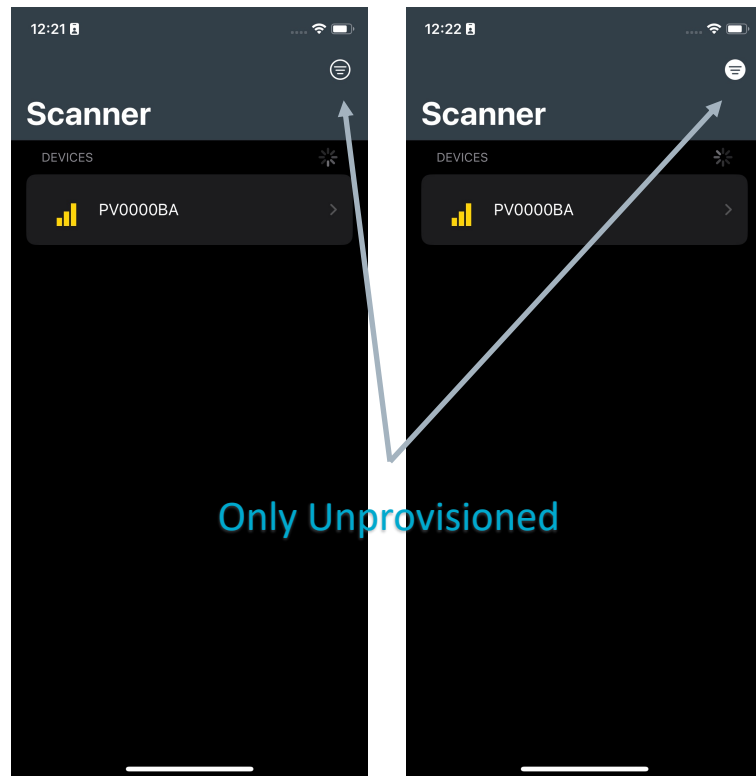
- Once here, the App starts scanning for Nordic Wi-Fi devices. It scans and displays all provisioned and un-provisioned devices here with a filter to allow seeing only un-provisioned devices.

- Click on the device to proceed to provisioning (or on a provisioned device for more information)

- In the upper right corner, you can enable/disable "Only Unprovisioned" filter. If it is enabled on unprovisioned devices will be displayed.
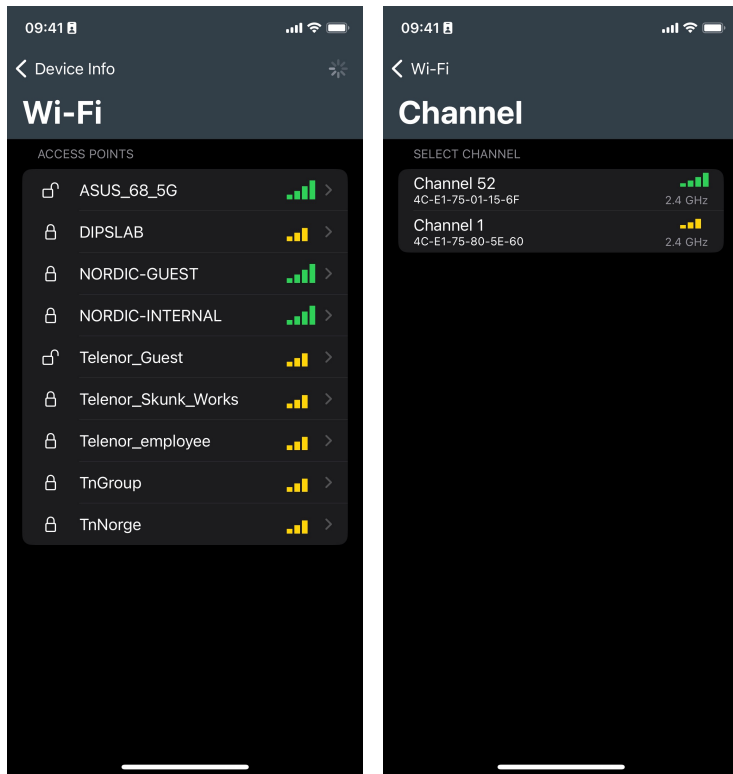
Selected Device details
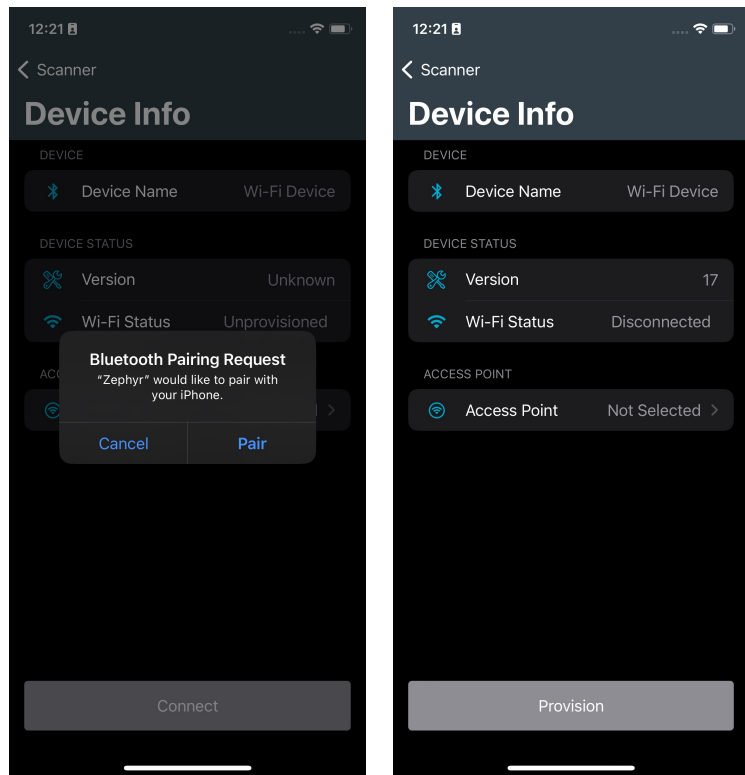
Once we select the Wi-Fi device to be provisioned, you come to this screen.

- You need to accept the paring request first.

- Here you can see the device name, version and current device status

- Clicking 'Access Point' field lead you to the next screen where you can

Device Scan results display & selection

The scan results received from the Wi-Fi device are displayed here.

- First screen displays list of scanned access points.

- Once you select access point screen with available channels will be displayed.

- This screen displays list of available channels for selected access point as well as BSSID, band and RSSI
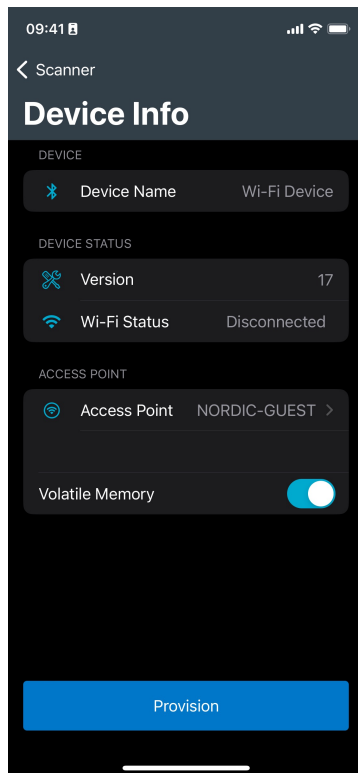
Password please…..
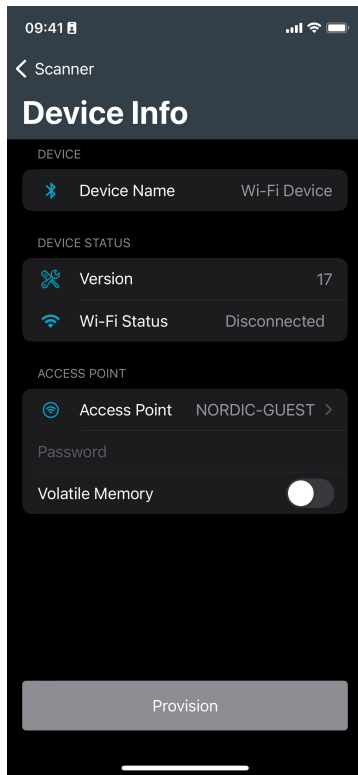
Once you select channel the device info screen will be opened again.

- If the AP is not open password field will appear and you will have to enter the password.

All set, review & GO….

This screen gives you the final configuration to be reviewed before triggering provisioning. You have options to change –

1. Device for provisioning

2. Different channel with the selected SSID

3. Password of the selected Access-Point

4. Where the provisioning data is stored on the Wi-Fi device – Flash (default) or RAM when is un-checked.

Go ahead and click "Provision"

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All Done ??
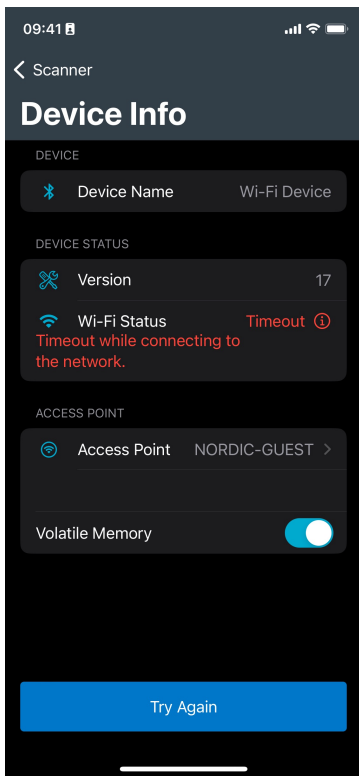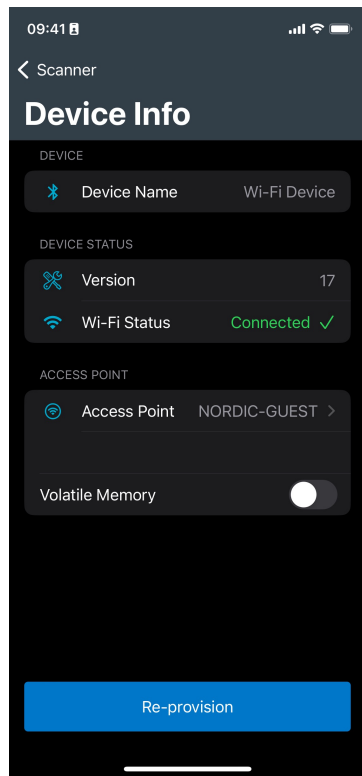
- Successful provisioning is shown in the first screen.
  - You can also Re-Provision device with another network after that.
- The second screen shows un-successful provisioning. You can try change the parameters and re-try provisioning.