

RDK-3i

Quick Start Guide

Whats included in this box:

RDK-3i Kit	x1	DC Power Cable	x1
Sonim XP8	x4	Ethernet Cable	x1
Cell Antennas	x2	Donor Radio Cable	x2
WiFi Antennas	x2	Quick Start Guide	x1
GPS Antenna	x1		
AC Power Cable	x1		

Step 1: Connect Power, Charge Battery

Attach AC Charging Cable to RDK-3i Kit by connecting the female end of the cable to the AC connector on front of kit, and male end to AC power outlet. Input voltage is 110/220 VAC.

Battery monitor will indicate charging condition when AC power applied.

Allow up to 4 hours for a full charge of the Li-ion battery system. Battery monitor will show 100% when fully charged. Once fully charged, the system is ready for use. It is a good idea to also charge the Sonim XP8 units during the battery charging cycle with RDK-3i Kit plugged into AC power.

Step 2: Attach Antennas

Attach Cellular Antennas.

Cellular antennas are identified with markings that indicated 3G/4G/LTE on antenna itself with SMA style connection.

Attach GPS Antenna. GPS antenna is the shortest antenna and utilizes an SMA connection.

Attach WiFi Antennas. WiFi antennas are the tallest and identified with appropriate markings and utilize an R-SMA connection.

Step 3: Turn Power On/ Connection Status

Press the On/Off button to turn power on. Button will illuminate Blue. Battery monitor should display battery voltage. Once power is on, you can attach additional devices to the available **USB or 12VDC** connections. After powering up the RDK-3i, the modem will boot the operating system and begin to attach to the cellular network.

There are three indicators that will illuminate Green to show successful modem boot "RUN" and successful attach to the cellular network "CELL" and satellite "SAT". Full boot up process may take up to 5 minutes to complete. If the RDK-3i loses commercial cellular service and is in Failover mode, the CELL indicator will not illuminate, the SAT indicator will illuminate Red and the RUN indicator will illuminate Green. After full boot, the Red SAT indicator remains on until CELL is illuminated, even when nothing is connected to the WAN port.

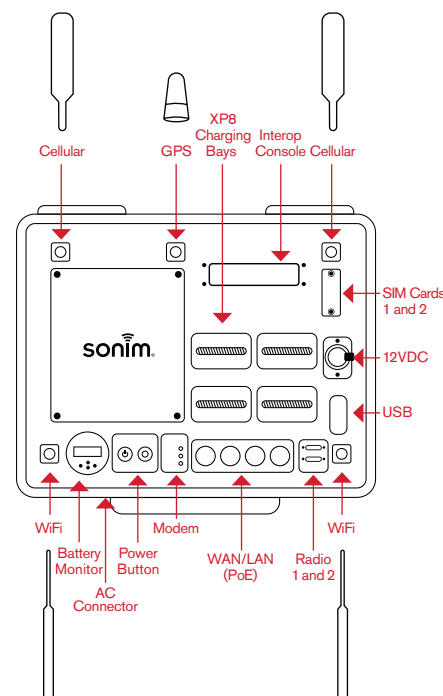
The circuit breaker on the RDK-3i is set to activate when current exceeds 7 Amps and is resettable. If the breaker is set (plunger up), reset by pressing the plunger down which should latch. If the plunger does not latch, or if it continues to set, please call support for troubleshooting and/or warranty repair.

Step 4: Bluetooth Battery Monitor from XP8

Every Sonim XP8 smartphone comes as a part of the RDK-3i Kit, pre-installed with the **VictronConnect** battery monitor application. The application can be launched from the main screen of the Sonim XP8. The Bluetooth enabled Victron Battery monitor can only be paired to one device at a time.

The application will display the following conditions of the internal Li-ion battery powering the RDK-3i Kit.

- Battery Voltage
- Battery Percentage of Discharge based on current usage
- Battery Capacity in Ah
- Battery Charge Percentage
- Battery Discharge Current
- Battery Time to Charge
- Battery Time Remaining until Discharged in Hours and Minutes based on usage.
- Low Battery Alarm



Step 5: Interoperability

JPS Interoperability Solutions RSP-Z2 Radio Interoperability Gateway main purpose is to capably link any voice communications format to any other. RSP-Z2 gateway features both radio and RoIP interfaces (along with interfaces for a variety of other voice communications formats), which is capable of linking donor resources locally as well as over an IP network.

Each donor radio is connected by a custom radio interface cable. Each cable has a circuit board with attenuation networks and coupling capacitors, set for optimal performance with the specific radio. All JPS interface cables have an associated Application Notes document to indicate proper, factory-optimized settings for the available radio interface configuration options. These are identical to the settings that are automatically set when the associated Radio Template is applied. All cables are designed to conform to the gateway's default settings wherever possible, minimizing setup adjustment requirements. Keep in mind that these optimized settings may not be best for each individual radio, and some individual "tweaking" of settings may improve performance. JPS has a library of cables customized for hundreds of different makes and models of radios and can manufacture interface cables on request for nearly any type of communication device.

Steps to Set-up JPS RSP-Z2 Gateway:

- On the RSP-Z2 console, turn Power On.
- Ensure all network settings are configured, first on the Cradlepoint, then the RSP-Z2.
- Verify RSP-Z2 console operating on latest firmware at <https://www.jpsinterop.com/downloads/firmware/>.
- Contact Push-to-Talk Over Cellular (PTToC) provider for PTT interoperability between RDK, XP8 handsets and radios. Each PTT provider requires a unique configuration.
- Connect JPS interoperability radio cables to compatible donor radios and RDK-3i Radio 1 and Radio 2 ports.
- Configure the LMR settings for the radios connected per the guidelines that are included with the JPS interface cables. Test and tweak settings accordingly.

Change Cradlepoint Gateway:

- Login to Cradlepoint (locally or via NetCloud)
- Browse to Networking > Local Networks > Local IP Networks
- Check the box on Primary LAN
- Click Edit button
- Select IPv4 Settings
- Change IP address to 192.168.1.1
- Click Save, then click OK

Configure JPS RSP-Z2:

- Browse to the RSP-Z2 to set up the radio and PTToC connections. The default IP address of the RSP-Z2 is 192.168.1.200.
- Once setting the Cradlepoint to that default LAN, set the Subnet Mask 255.255.255.0 and the Gateway IP 192.168.1.1, first on the Cradlepoint router, then add the Gateway IP to the RSP-Z2.
- Note: Each PTT provider requires a unique configuration. Motorola Solutions / Kodiak PTToC based applications require VPN. ESChat based applications require a static public IP SIM and then configuration is pier to pier using server generated Port using UDP traffic. The public addresses on the RSP-Z2 and the VIA server on AWS must match and also the Ports must match to securely register.

Step 6: LED Status

The RDK-3i includes LEDs to display Cradlepoint modem, cellular network and satellite status. In order for the LEDs on RDK-3i to work, a LED application must be added to the Cradlepoint Netcloud Manager account.

Open Netcloud Manager account

Select Tools

Enable NCOS SDK by checking the checkbox

Add a new application by clicking Add

Add LEDpoison SDK by selecting the file from the browse field

Click Upload to add the LEDpoison SDK

Assign the LEDpoison SDK to the Cradlepoint router in the RDK-3i by clicking on Groups

If you don't have a Group created, please add a new Group

Select the checkmark box beside the Group to assign the LEDpoison SDK

Select Commands, select Manage NCOS SDK Applications

Select the checkmark box beside the LEDpoison SDK, select the Add button, select Done

Any existing and new Cradlepoint units in the Group will load the LEDpoison SDK automatically.

Once the Cradlepoint unit is updated and SDK installed, please reboot the Cradlepoint router to apply the LED lighting configuration on the RDK-3i.

Step 7: WAN Failover to Satellite

The Satellite option with intelligent failover can be used when there is no cellular connectivity or in an access restricted environment.

Broadband Global Area Network (BGAN) terminal, Cobham Explorer 710 is certified to use with the RDK-3i Kit.

Every Sonim XP8 smartphone comes as a part of the RDK-3i, pre-installed with the **Cobham SATCOM EXPLORER Connect** application. EXPLORER Connect offers monitoring and configuration of the EXPLORER terminal and includes a built-in satellite phone for making or receiving satellite calls using the EXPLORER terminal.

If you are in a cellular restricted area, you can connect the **Explorer 710 terminal into the WAN interface**. Follow the terminal's instructions to connect it to the satellite. This will allow the internal router to have a network connection similar to the cellular connection except via the Inmarsat BGAN satellite service.

Bandwidth can vary based on the type of satellite terminal attached.

The BGAN Explorer 710 is optional and may be purchased separately.

Step 8: Power Down/ Storage

To power down the RDK-3i Kit, depress the power button which will remove internal power to all RDK-3i components. This will also disengage the power relay that connects the internal battery to the unit.

The RDK-3i Kit can be stored without worry of the internal battery discharging for **up to 6 months**.

It is good practice to keep the RDK-3i Kit and Sonim XP8 smartphones charged at all times and ready for deployment.

A regular cadence of inspection, and maintenance to include charging is highly recommended to keep the unit "mission-ready."

When storing the XP8's in the device compartment, the top 2 devices should be placed face down.

**Mission
critical quick
access &
connectivity**

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When calling in please reference you have a Rapid Deployment Kit