



Sat RunnerTM

DRAFT



**2020
Owner's
Manual**

Congratulations on owning a certified PodRunner® Product! We thank you for your support and hope you enjoy our excellent products, documentation, and customer service. We at Rescue 42 guarantee the satisfaction of our users. If there are any questions regarding your product or the contents of this manual, please reach out to (888) 427-3728.

The purpose of this Owner's Guide is to provide explanations and procedures for operating, maintaining, and troubleshooting a SatRunner™.

Please take a moment to register your product online:
www.ThePodRunner.com/registration-form

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Revision History

Description	Date	Approved
Initial Release	2020-xx-xx	

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**STOP!**

READ THESE WARNINGS BEFORE USING YOUR PODRUNNER®

Failure to follow these instructions or heed these warnings may cause damage to the PodRunner® unit, your vehicle or other property, cause bodily injury or death, and void your warranty.

- You are always responsible for damage to your PodRunner, other property, injury or death caused by incorrect use of a PodRunner.
- Vehicle transport of a PodRunner is limited to a class III (or higher), 2" receiver hitch. Never use a hitch extender or hitch size converter with a PodRunner.
- Never exceed your vehicle and hitch receiver tongue weight specification. You are always responsible for the amount of load you carry.
- Maximum weight allowed on the PodRunner chassis (Runner) is 500 lbs.
- Never attempt to load or unload a PodRunner unless you are on level ground.
- Always set the Runner's parking brake prior to loading or unloading your PodRunner.
- Check all bolts and nuts for tightness prior to transporting a PodRunner.
- Always make sure that all door latches are fully engaged prior to transporting.
- PodRunner will not correctly load and unload unless the PitchLok™ Pins and PitchLok holes are kept lubricated.
- Never attempt to use a drill to raise or lower a PodRunner scissor lift with the crank handle engaged.
- Never transport a PodRunner on a vehicle unless the handle's safety lanyard is correctly connected to lock the pull handle in its upright stored position.
- Never transport a PodRunner on a carrying vehicle with a Hitch Adapter in the PodRunner's Hitch Adapter Bed.
- Never transport a PodRunner with the PitchLok pins in the "Load" position.
- PodRunner is not for transport of people, animals, flammable liquids or other hazardous materials.
- Never attempt to transport a PodRunner unless the Pod and all contents or other carried items are firmly and completely attached to the PodRunner. Insufficiently secured items may fall off. You are always responsible for damage to your PodRunner or other property caused by incorrect use of a PodRunner.
- Never use the desktop as a step or seat. Damage to the Pod or injury could occur.
- Use extreme caution when maneuvering PodRunner on inclines or slopes. Never attempt to roll a PodRunner on terrain that is too steep or soft to maintain control of the PodRunner. It may roll away, sink or tip over.
- Never attempt to move a PodRunner unless the upper frame is in a completely collapsed position.
- Never transport a PodRunner on a vehicle unless the lower frame is in its completely raised position.
- Always set the parking brake and deploy the wheel chocks before leaving a PodRunner. In some cases, even these devices may not be enough to prevent the PodRunner from rolling away. You are always responsible for securing the PodRunner from unintentional movement.
- It may be required by law (and we strongly recommend) using the PodRunner running and brake lights if the PodRunner blocks the taillights or turn signals on your vehicle. Attach the four-pin electrical connector and test the PodRunner lights prior to operating the vehicle.

- Do not carry loads that are wider than your vehicle.
- Relocate license plate if blocked by the unit (mounting brackets with proper illumination are provided).
- Check the security of your load, fasteners and pins before driving your vehicle with the PodRunner attached. We recommend rechecking these items at all rest/fuel stops.
- Severe bumps can damage the PodRunner or the vehicle's hitch. Drive slowly on rough roads. Stop and make a thorough inspection if your PodRunner® strikes the road. Correct any problems before resuming travel.
- Check to see that your vehicle is equipped with an exhaust system that does not direct exhaust directly onto the Runner or Pod as damage to the unit and its contents may occur.
- Do not drill, weld or modify any part of a PodRunner. Never alter or replace a component on the Runner with any part except one supplied by Rescue 42, Inc.
- Always unpin, rotate and re-pin the PodRunner landing gear to its raised position before attempting to drive on or over any terrain that might cause the wheels to strike the ground. In some cases rotating the landing gear to its raised position still may not provide enough ground clearance. Do not operate your vehicle in this situation. You are always responsible for damage to your PodRunner® or other property caused by incorrect use of a PodRunner.
- Use extreme caution when operating a vehicle with a PodRunner attached. Backing, cornering, bumps, speed and vehicle control are all areas where you need to be aware that you have an extension off the back of your vehicle and extra load in your hitch. You are always responsible for damage to your PodRunner or other property caused by incorrect use of a PodRunner. Review and follow the guidelines for "Vehicle Operations" in this owner's manual.
- Never use a PodRunner that is damaged in any way.
- Not for use with ATV's, trailers or towed vehicles.
- PodRunner may not mount to the back of some vehicles with a rear mounted spare tire.
- Most PodRunner components are finished to prevent rust. As with any metal equipment, we recommend you keep the unit clean and remove road salt and debris.
- Do not allow harsh chemicals, road salt or mud to accumulate on the unit for an extended amount of time.
- The Thrust Screw and Mounting Pin are not coated with a rust prohibiting coating. These moving parts must be kept well lubricated with grease to ensure smooth operation and prevent corrosion.
- Pins and Bolts should be inspected regularly. Replace if any parts are bent or excessively worn.
- It is recommended that the unit be stored indoors when not in use.
- Pod locks are designed to deter vandalism and theft but should not be considered theft proof.
- It is recommended to secure the unit to the vehicle if left unattended using a standard cable locking system as long as it does not interfere with the function and safety of the vehicle.
- **Always** make sure that all components are mounted and fully are secure. Straps should be inspected frequently for proper tension and wear. Replace straps immediately if damaged.
- **Always** properly store antennas when transporting your PodRunner. Failure to do so can cause damage to the antennas and bulkhead fittings or result in injury.
- **WARNING** Exhaust contains poisonous carbon-monoxide gas that can build up to dangerous levels in closed areas. Breathing carbon monoxide can cause unconsciousness or death. Never run the generator in a closed, or even partly closed area where people may be present.
- **WARNING** This product contains chemicals known to the State of California to cause cancer or birth defects or other reproduction harm. For more information visit www.P65Warnings.ca.gov.

Symbols & Definitions

Symbols

 Indicates that you should consult the relevant section of this Owner's Manual for information on a particular part, assembly, or procedure.

 Indicates precautions that must be followed precisely in order to avoid the possibility of personal injury and serious damage to the PodRunner.

Definitions

- **CRD** – Compact Rapid Deployable
- **GPIO** – General Purpose Input/Output
- **ICU** – Inverter Charger Unit
- **NCM** – NetCloud Manager
- **PCM** – Power Control Module
- **PEP** – Power Entry Panel
- **SEP** – Signal Entry Panel
- **VSAT** – Very Small Aperture Terminal

System Identifiers

 Alternating Current (AC)

 Direct Current (DC)

 Battery

 Fuse Box

 Circuit Breaker

 Lighting

 Cooling Control

 Temperature Control

 DC to AC Inverter

Quick Start Guide

Stablizer Deployment



1. Remove red safety lanyards securing stabilizer legs and rotate legs to the ground. Raise chassis with hand crank approximately 12". Remove the orange and red stabilizer cables from storage drawer.
2. Anchor orange cable to key slot on the long lower frame rail on the front and back of the chassis. Orange cable mount keyholes are on the bottom of the rails [pictured top right]. Anchor opposite end to slot in stabilizer leg. Repeat for other orange cables [pictured above].
3. Lower chassis pull handle to ground before connecting red cables. Anchor red cable to key slot on the lower frame short end rail and cross over to opposing leg. Cable mount keyways are on the face of the short rails. Repeat for other red cables.
4. Lower the chassis with crank handle by rotating counterclockwise. This will force weight onto legs and slide them outwards until cables are taught. Ensure feet slide smoothly and are not caught on a rough surface or obstacle. Lower chassis enough to stabilize where the wheels are not bearing any weight.
5. If SatRunner is not close to level due to uneven ground, reverse process to take weight off the stabilizers and extend leveling feet on the downhill side [bottom right]. Re-tighten the cables.
6. Rotate chassis handle upright and secure with red lanyard.

Cable Mount Slots



Chassis Pull Handle



Stabalizer Feet



Quick Start Guide

Satellite Deployment

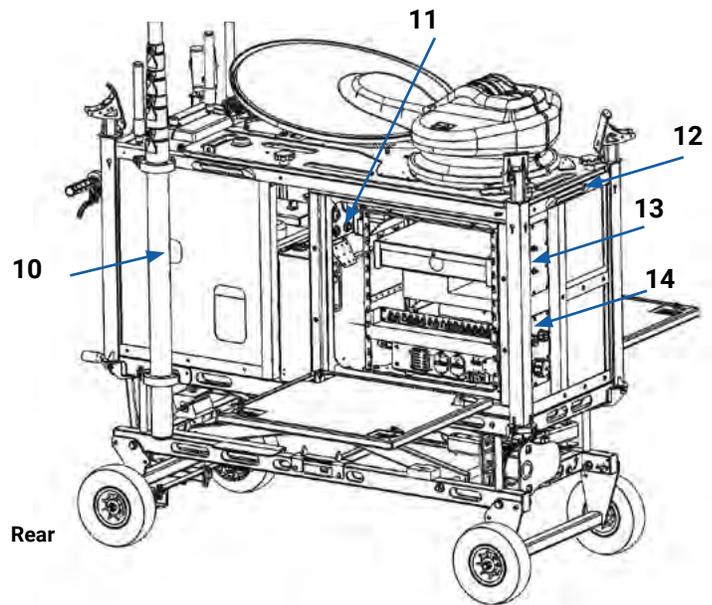
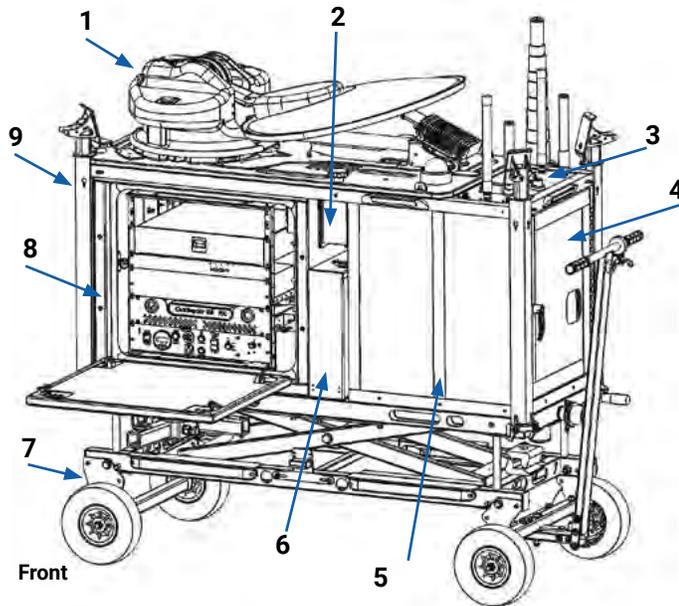
1. Set up your SatRunner in an appropriate location on solid, level ground with a clear view of the Southern sky.
2. Deploy stabilizer legs as shown on **Stabilizer Quick Start Guide**. Fully stabilize before proceeding with satellite deployment!
3. Turn on the red **Master Power** switch to the SatRunner (see picture – red circle)
4. Wait 10 seconds, and then push the green Winegard Power button (see picture – green circle). The satellite computer screen (picture – blue rectangle) will light up and go through a diagnostic check.
5. Allow the Winegard controller to boot up and establish a GPS heading. When the green “Find Satellite” button comes on, you are ready to continue. During this process, setup your generator or shore power connections (if applicable).
6. Press the green “Find Satellite” button on the Winegard controller screen (see picture). The satellite signal acquisition system is automatic from this point.
7. The Winegard dish will begin moving and search for the satellite. This process can take anywhere from 3 to 8 minutes. When the red “Stow Antenna” button comes on, you are connected to the satellite, but broadband takes a few more minutes (picture). When the “signal” message on the bottom left of the screen reads “Signal Online”, allow another minute for the Cradlepoint to prioritize traffic to the satellite. You are now connected to the High-Speed Ka-band ViaSat satellite broadband.



At a Glance

SatRunner Pod

- | | |
|-----------------------------------|----------------------------------|
| 1. Satellite Terminal | 8. Pod |
| 2. Air Conditioner | 9. Stabilizer Leg |
| 3. Antenna Deck | 10. Telescoping Mast |
| 4. Enclosed Generator / Fuel Tank | 11. AC Power Entry Panel |
| 5. Exoskeleton | 12. Exterior Scene Lighting (x4) |
| 6. ICU Cabinet | 13. Satellite Panel |
| 7. Runner | 14. DC Power Entry Panel |



Enclosure

The Enclosure is constructed of Powder Coated Aluminum and is NEMA 4X rated. Standard PodRunner Vinyl Decals are included.

Enclosure Rack: (Top to Bottom)

- Cellular Radio Area
- Drawer (for Storing Accessories)
- Viasat Modem
- Winegard Satellite Controller
- Cradlepoint IBR1700 Router
- Power Control Module

Exoskeleton

The outer exoskeleton frame supports the Auto-Acquire antenna, secures the fuel system, provides space for antenna suite, and protects the enclosure.

Stablizer Legs

There are four (4) Stabilizer Legs, that MUST be deployed when the Antenna and/or Mast are in use. The Stabilizer Legs, located at each corner, can be quickly and easily be setup by one individual. Refer to page 24.

▲ In addition to the Stabilizers, the Handbrake MUST be locked, and the included Wheel Chocks MUST be used when deploying a SatRunner.

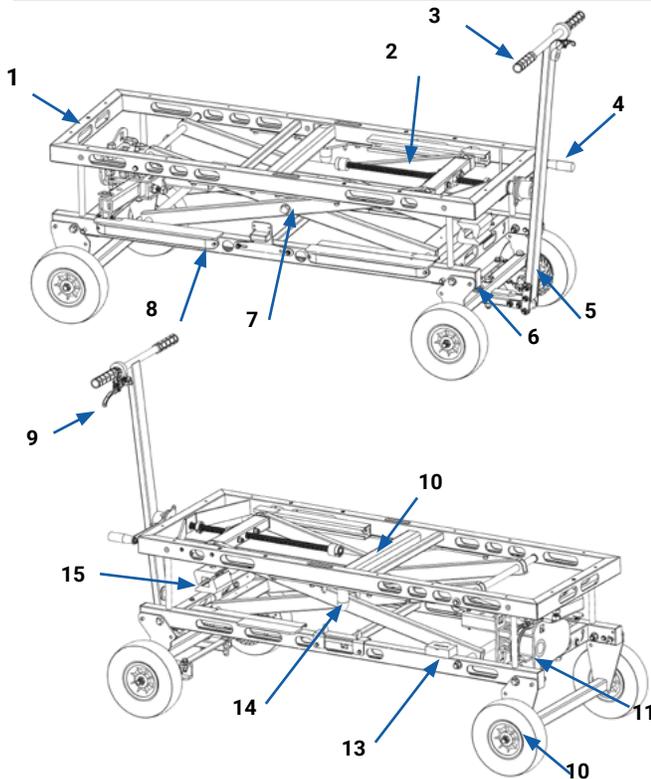
Satellite Antenna - Mast

The attached telescoping fiberglass mast is for deploying antennas at an increased height when additional line-of-sight is required. Additional antenna brackets and wiring purchased separately. To deploy the mast, refer to page 41.

At a Glance

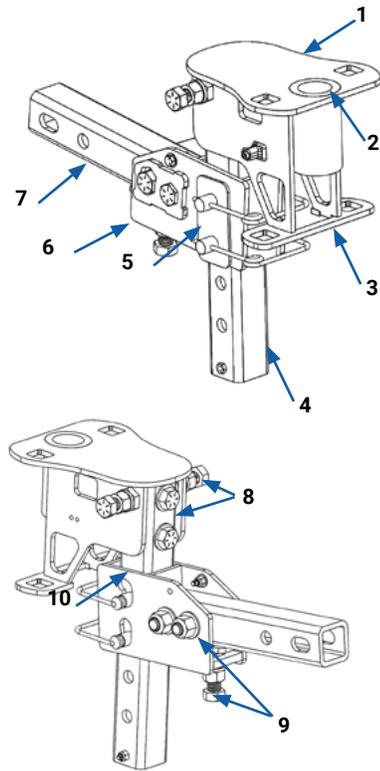
Runner (Chassis)

- | | |
|------------------|--------------------------|
| 1. Upper Frame | 9. Brake Lever |
| 2. Thrust Screw | 10. Bridge |
| 3. Pull Handle | 11. Hitch Adapter |
| 4. Crank Handle | 12. Tail Axle |
| 5. Disc Brakes | 13. Lighting Pigtail Box |
| 6. Steering Axle | 14. Mounting Pin |
| 7. Scissor | 15. Wheel Chocks |
| 8. Lower Frame | |



Hitch Adapter

- | | |
|---------------------------|---------------------------|
| 1. Mounting Box | 7. Receiver Tongue |
| 2. Mounting Pin Receiver | 8. Roll Adjustment Bolts |
| 3. Beard | 9. Pitch Adjustment Bolts |
| 4. Height Adjustment Tube | 10. PitchLok™ Holes |
| 5. PitchLok™ Pins | |
| 6. Pitch Box | |



Scissor Lift System

The SatRunner™ Chassis is equipped with a Scissor Lift System that can be raised and lowered for transportation and stabilization.

Handbrake & Wheel Chocks

There is a Handbrake on the Pull Handle and will lend assistance in slowing or controlling but is not guaranteed to fully stop the unit.

To engage the Parking Brake, pull the Brake Handle and then push the Lever over to lock it.

⚠ When the unit is being used in a stationary position, the included Parking Brake AND Wheel Chocks MUST be used to prevent the unit from rolling away.

Hitch Adapter

The hitch adapter is the device that allows you to quickly couple and uncouple the SatRunner to your vehicle. It comes preset to a common position for transporting.

⚠ Always adjust the Hitch Adapter to your vehicle prior to transit. Failure to do so will result in poor ride quality. Refer to page xx for adjustment.

Runner

Basic Operation

Brake System

The SatRunner is equipped with a handbrake system to control the steering wheels. There is a Handbrake Lever located on the Pull Handle which can be used manually or locked into place with the small cam. Use the brakes to help control the SatRunner on inclines.

The Brake Line goes from the Handle down to two Brake Calipers on the steering wheels. Use caution not to pinch the brake lines.

⚠️ A Locked Handbrake does not guarantee the SatRunner is fully secured in position.

Always Use the included Wheel Chocks!

Tail Lights

The SatRunner™ is equipped with Running, Turning, and Brake Lights.

A 4-pin Trailer Connector is stored in a small box on the lower frame. When transporting the SatRunner it MUST be plugged into the vehicle. The Trailer Lights operate in conjunction with the Vehicle Lights.

Connecting Trailer Lights

1. Open 4-pin Trailer Plug Box
2. Plug the 4-pin Connector into your vehicle's trailer light adapter
3. Load SatRunner onto the Vehicle. Refer to page 17.
4. Verify proper operation of all Running, Turning, and Brake Lights BEFORE driving away.

⚠️ Inoperative Tail Lights should be replaced immediately.

Raising & Lowering

⚠️ Caution must be used not to over extend the frame in either direction as you may damage the Thrust Screw and/or Scissor Legs.

Turning the Lift Handle CLOCKWISE will extend the Scissor Legs and is performed when:

- The SatRunner is on the ground and you want to RAISE the Pod
- Unloading the Vehicle-Mounted SatRunner (Extends the retracted wheels to the ground and lifts the SatRunner out of the Mounting Box.)

Turning the Lift Handle COUNTER-CLOCKWISE will retract the Scissor Legs and is performed when:

- The SatRunner is on the ground and you want to LOWER the Pod.
- Loading the Vehicle-Mounted SatRunner (Retracts the legs off the ground and Mounts the SatRunner into the Mounting Box.)

Three Lobe Drive

The crank handle drive pin can be located into any of the three drive lobes. In some low clearance situations where you cannot rotate the handle completely, you can use these steps to keep full functionality without outside tools.

Using Drives lobes as a ratchet:

1. Crank handle desired direction until obstruction.
2. Remove pin, rotate handle backwards and repin into drive lobe.
3. Repeat steps 1-2 as necessary.

Hex Attachment Point

⚠️ Do NOT use an impact driver or impact wrench on the hex attachment point!

⚠️ Use caution when using any power tools on the hex attachment point.

The hex attachment point (3/4"), located inside the blue handle bumper of the runner crank drive, can be used alternatively to three drive lobes. This allows faster raising or lowering with the use of an outside tool.

Add:

"If vehicle does not have a 4 pin connector you can use vehicle charge harness as an adapter (refer to page xx) or purchase an adapter from any local auto parts store."

Rewrite statement

Need Clarification - rewrite

Need Clarification - "Warning disconnect"

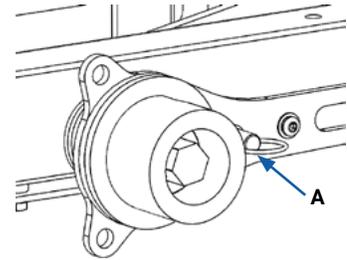
[Continued on next page]

Runner

Add:
"Warning Symbol- Always disengage crank handle lock pin before using outside tool"

Steps for Raising and Lowering using a separate tool

1. Remove crank handle lock pin [A].
2. Use separate tool to raise or lower. For example, a ratchet with 3/4" socket or power drill.
3. Insert crank handle lock pin [A] capturing a drive lobe.



Loading

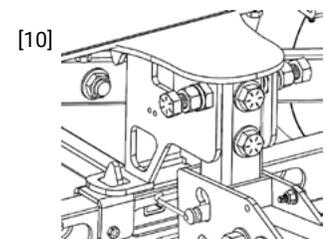
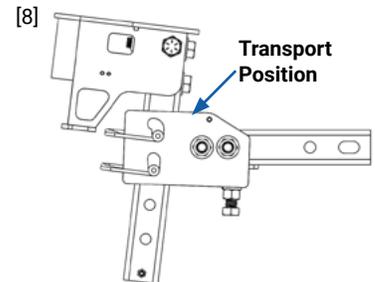
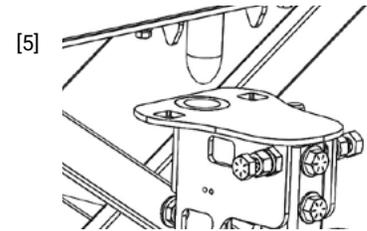
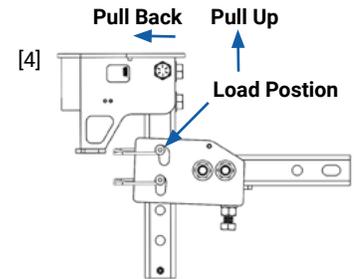
- ⚠ Read all instructions carefully before attaching the SatRunner to a vehicle and driving away.
- ⚠ If you will be transporting the unit with the same vehicle every time, or traveling a far distance mounted to a new vehicle, it is highly recommended to observe the pitch and roll of the mounted unit and make any necessary adjustments BEFORE traveling. See Adjusting the Hitch Adapter on page 15.
- ⚠ Mounting the SatRunner requires the use of a 2" (class III or greater) vehicle hitch.

Steps to Loading

1. Move license plate to SatRunner Lower Frame.
2. Position your vehicle's tow hitch over solid, level ground.
3. Remove the Hitch Adapter from the Chassis Bed and insert the Receiver Tongue into the hitch of vehicle. Secure with the Anti-Rattle Hitch Pin, [refer to page 23](#).
 - a. In an emergency a standard hitch pin may also be used but will allow more movement of the SatRunner while attached to the vehicle.
4. Set the Height Adjustment of the Hitch Adapter. Minimum Clearance between the bottom of a mounted PodRunner and the ground is 12". Refer to page 23.
5. Pull the Hitch Adapter's Mounting Box UP & TOWARDS you (away from the vehicle), to seat the PitchLok Pins in the LOAD position.
6. Raise the SatRunner by rotating CLOCKWISE to elevate the mounting pin above the hitch adapter and roll into position with the mounting pin above the mounting box receiver tube.
7. Connect the 4-pin connector to your vehicle's 4-pin receiver and test for proper operation of the Stop, Turn, and Tail lights.
8. Turn the lift handle COUNTER-CLOCKWISE to lower the Mounting Pin into the Hitch Adapter until the Mounting Tabs drop and lock into their respective holes.
9. Continue lowering. **Once you see the weight begin to transfer to the vehicle's suspension, STOP** turning the handle. Give the unit a firm push towards the vehicle. The PitchLok Pins will slide down into the TRANSPORT position.
10. After securing the unit into the TRANSPORT Position, continue raising the lower frame until the hitch adapter beard locks on the ears of the lower frame, then a 1/4 to 1/2 a turn more to add compression securing it to the Hitch Adapter.
11. Rotate wheels up into nested position. See Ground Clearance page 13.
12. Verify SatRunner chassis lights are fully functional before traveling.

Need Clarification - Where to jump to.

More detail on 12" measurement



[Continued on next page]

Runner

Steps to Loading *Continued*

11. Rotate wheels up into nested position.

⚠ Do not pinch the Brake Lines. Exercise caution throughout procedure below.

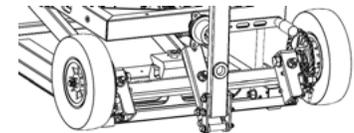
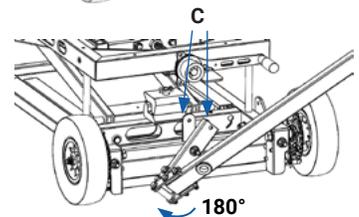
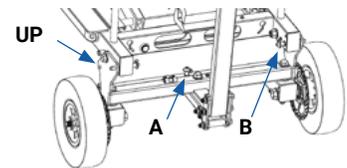
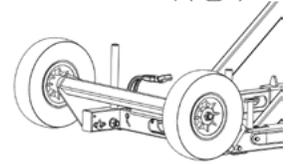
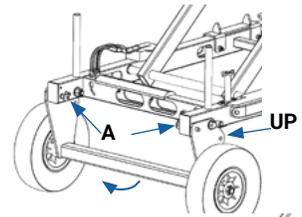
Tail Wheels

1. Remove both leg pins (A) from both sides of the axle assembly.
2. Rotate the tail axle upwards.
3. Reinsert both leg pins into the UP position holes.

Steering Wheel

1. Remove the steering lock pin [A] and both leg pins [B].
2. Rotate the axle half-way up, then rotate the steering handle clockwise 180°.
3. Align the steering link and lock tab holes [C] and insert the steering lock pin [A].
4. Rotate the wheels all the way into the UP position.
5. Reinsert both leg pins [B].
6. Use the red safety lanyard to secure the handle.

12. Rotate wheels up into nested position.



Unloading

A clearance of four to five (4-5) feet on the sides and back of mounted SatRunner will be necessary during the unloading process. (You may need to handle the unit from any of the three sides and proper clearance will ensure there are no issues unloading the SatRunner from your vehicle.)

⚠ Do not unload on incline. Podrunner may tip over or roll away.

Steps to Unloading

1. Position your vehicle (and the mounted SatRunner) over firm, level ground.
2. Disconnect and stow the 4-pin light connector.
3. Remove the red safety lanyard from around the pull handle and lower it to the ground.
4. Set the SatRunners Parking Brake.
5. If the wheels are in the UP position, they must be lowered before proceeding to the DOWN position, see Ground Clearance page 20.
6. Turn the Lift Handle CLOCKWISE, to lower the wheels, until they meet the ground.
 - a. Once the wheels meet the ground, you will feel resistance in the Lift Handle as the weight shifts from the vehicle to the SatRunner Chassis.
 - b. Continue turning the Lift Handle CLOCKWISE, until the PitchLok Pins pop loose and the Mounting Pin comes out of the Mounting Box.

⚠ If the PitchLok Pins do not release (typically due to lack of lubrication), push the unit towards the vehicle. Alternate between rotating the Lift Handle and pushing the unit toward vehicle, until the PitchLok Pins release.

[Continued on next page]

Runner

Unloading *Continued*

7. Continue elevating until the Mounting Pin is clear of the Mounting Box, unlock the parking brake and move the unit away from the vehicle.
8. If you will not be mounting the SatRunner back onto that vehicle, remove Hitch Adapter from the vehicle and store it in the bed on the Lower Frame. Refer to page 24.
9. Be sure the unit is clear of any obstruction and then turn the lift handle COUNTER-CLOCKWISE to lower the upper frame onto the lower frame.



The unit should only be moved with the Upper Frame fully lowered for stability.

10. You may now roll the SatRunner to the desired location for operation.

Transporting on Vehicle

The SatRunner Chassis has all necessary lighting for transportation:

- Running Lights
- Left and Right Turning Lights
- Brake Lights
- License Plate Illumination Light

The 4-pin Trailer Connector is stored in a small box on the lower frame. When transporting the SatRunner (or any PodRunner Product), it MUST be plugged into the vehicle, so the Trailer Lights operate in conjunction with the Vehicle Lights.

BEFORE DRIVING AWAY, ALWAYS VERIFY PROPER OPERATION OF ALL SATRUNNER LIGHTS.

Double Check SatRunner to make sure:

- All red lanyards secured for stabilizer legs and pull handle
- Satellite stowed
- Mast antennas stowed, if present.
- All door latches closed completely

Before Driving

1. Always verify proper connection of the 4-pin Trailer Light Cable and double check all tail lights are in working order, BEFORE driving away with the SatRunner attached to your vehicle.
2. Adjust your Side and Rearview Mirrors for proper visibility.
3. If the view of your License Plate is obstructed, you must relocate it onto the License Plate bracket, supplied on the SatRunner Chassis.

While Driving

ALWAYS exercise more caution than normal when driving with a mounted PodRunner Product.

You will gain 3 ft of vehicle length with the PodRunner attached to the back of your vehicle.

- Accelerate and Stop slower, so you do not violently shake the mounted SatRunner.
- Take turns wider, because your tail swing will be larger than normal.
- Use extreme caution if maneuvering your vehicle in tight spaces. The overall vehicle length will be longer than you may be accustomed to.
- If you must reverse the vehicle, it is recommended to use a spotter.
- If a spotter is not available, driving in reverse is done at the discretion of the driver.
- Damage may be done to the wheels or chassis if proper precaution is not taken.
- Slow over bumps
- Caution on steep angles and driveways
- Do not drive over curbs

Runner

Transporting on Ground

- ⚠ Always transport your SatRunner in the lowered position.
- ⚠ Avoid soft terrain such as soil and sand. The SatRunner is designed to be transported by vehicle over such surfaces.
- ⚠ Avoid steep inclines and slopes. The brakes are designed to help maneuverability but not a fail-safe.
- ⚠ Always secure handle in upright position with red safety lanyard after transporting to avoid a tripping hazard.
- ⚠ Always secure handle in upright position with red safety lanyard after transporting to avoid a tripping hazard.

Need Clarification

Wheel Chocks. Use additional means such as straps in extreme conditions.

Hitch Adapter

The hitch adapter is the device that allows you to quickly couple and uncouple the SatRunner to your vehicle. It comes preset to a common position for transporting.

- ⚠ Must be adjusted prior to first use.

Adjustment

The hitch adapter has room for adjusting pitch, roll, and height. Pitch being the amount of tilt toward or away from the vehicle, and roll being the side to side rotation. If the intended travel is a short distance these adjustments are generally not needed but are recommended if you plan to drive a long distance

- ⚠ Always remove the SatRunner from your vehicle prior to making any adjustments to the Hitch Adapter.
- ⚠ Must re-adjust after first use. Use....

Need Clarification

Pitch Adjustment

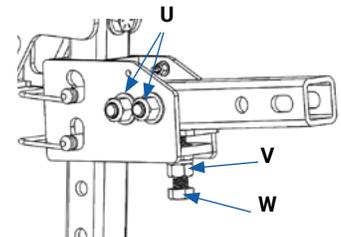
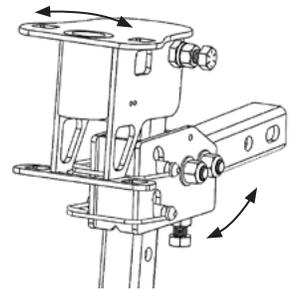
To adjust the Pitch of your SatRunner (the angle toward or away from the vehicle), mount the unit on the vehicle using the directions on "Loading" page 15. Stand to the side of the vehicle and note the pitch (angle) of the mounted unit.

1. Pitch should be slightly toward vehicle
2. Loosen (but do not remove) both Pitch Adjustment Nuts [U].
3. Loosen the Vertical Pitch Adjustment Lock Nut [V].
4. Set the angle (pitch) by turning the Vertical Pitch Adjustment Bolt (5/8") [W] as necessary.
5. Tighten down the Pitch Adjustment Lock Nut (5/8") [V].
6. Tighten the Horizontal Pitch Adjustment Nuts (15/16") [U] to the required torque of 159 ft/lbs.

Roll Adjustment

To adjust the Roll of your SatRunner (angle side to side), mount the unit on the vehicle using the directions on Loading page 15. Stand behind the vehicle and observe the angle of the mounted unit. It should be as level as possible

1. Slightly Loosen (but do not remove) Mounting Box Bolts [X].
2. Loosen both Roll Adjustment Lock Nuts [Y].
3. Adjust the angle (roll) left or right by either tightening or loosening the Roll Adjustment Bolts (5/8") [Z] as necessary.
4. Tighten BOTH Roll Adjustment Bolts [Z] and then retighten the horizontal Roll Adjustment Lock Nuts [Y].
5. Tighten the Mounting Box Bolts [X] to the required torque of 159 ft/lbs.



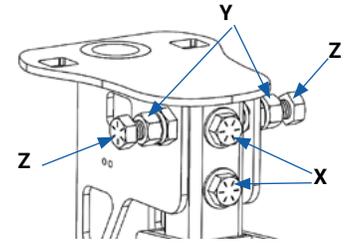
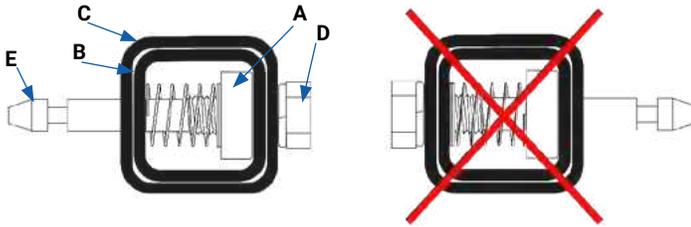
Runner

Movement Reduction

Your SatRunner comes with an anti-rattle hitch pin pre-installed and is meant to reduce the inherent slop in the Hitch Adapter tongue to the Receiver tube of your vehicle. It requires the use of a wrench to install on your vehicle.

⚠️ Must have pin inserted on the same side as the nut (A). Include graphic of correct orientation, and one with pin flipped with a red X through it

1. Insert the nut and spring [A] 7/8" in. into the Hitch Adapter tongue [B].
2. Slide the Hitch Adapter into the Receiver of your vehicle [C].
3. Thread the bolt [D] until tight and secure it with the cotter pin in slot [E].



Height Adjustment

Need Clarification

⚠️ The minimum clearance between the bottom of a mounted SatRunner's tires and the road surface is 12"

⚠️ If your receiver clearance is less than 16", you MUST rotate the wheels into the UP position. See Ground Clearance on age 18.

Need Clarification

⚠️ Must have pin inserted on " " side as block.

All vehicles will have a slightly different Hitch Height. You will need to adjust the Hitch Adapter to your specific vehicle's hitch height. To figure out your hitch receiver's ground clearance, measure the distance between the ground and inside top edge of your hitch receiver tube as shown.



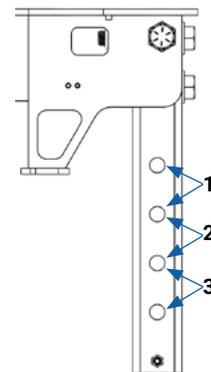
Use the Chart to determine which PitchLok pin position should be used. This will provide the minimum clearance, but it is strongly recommended to mount your SatRunner as high off the ground as possible.

#	Clearance
1	24" +
2	20-24"
3	16-20"

Need Clarification

"Measure of reciever above ground Check!"

⚠️ These recommendations may not guarantee that your SatRunner will have adequate road clearance. If you still do not have enough clearance, DO NOT operate your vehicle with the SatRunner attached.



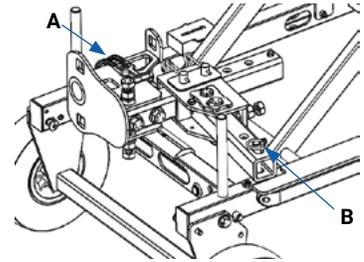
EXAMPLE: If your receiver clearance measurement is 21", you would put the PitchLok pins into position 2 for minimum clearance, but position 3 would allow the PodRunner to ride higher off the ground.

Runner

Storage

The Hitch Adapter can be stored in the Hitch Adapter Bed on top of the Lower Frame.

1. For easiest storing, set height adjustment to its lowest position (1) in the pitch box.
2. Raise upper frame and arrange Hitch Adapter as shown.
3. Secure hitch adapter with elastic latch [A] and lynch pin [B].



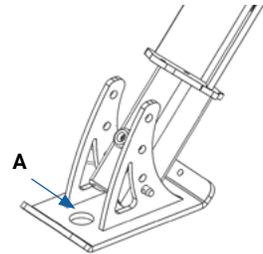
Stabilizers

Deploying

BEFORE deploying the Stabilizer Legs, it's recommended you do anything that will rock the unit, such as; Connecting Wi-Fi & LTE Antennas, and/or removing the Generator and Auxiliary Fuel Tank. (This will ensure proper levelness.)

1. Remove the Retaining Lanyard and Lower each Stabilizer Leg to the ground.
2. Use the Crank Handle to raise the Body ~12" (from fully lowered).
3. Obtain 4 RED and 4 ORANGE Cables from the drawer inside the unit.
4. Connect one end of a RED Cable to a slot in the end of the Frame and then hook the other end into the slot on the Stabilizer Leg. PHOTO OF RED CABLE INSTALL
5. There will be 4 Red Cables connected on the ends of the Chassis. (One per each Leg)
6. Now connect one end of the ORANGE Cables to the slot in the side and the other end to the Stabilizer Leg. PHOTO OF ORANGE CABLE INSTALL
7. Once the Cables are secured on all ends, lower the Upper Frame by cranking counterclockwise until all the Cables are Taut and check stability. Reposition if necessary. If leveling is required see **Feet Adjustment/Leveling** section below.
 - a. Lift lower frame wheels just off the ground to force load to the widest footprint on stabilizers.
8. Stake down the Stabilizer Feet for additional grip if necessary, using the hole in each foot [A].
9. Rotate the Pull Handle upwards and secure it with the attached red safety lanyard.

Need Clarification - "Red Cross" text placement.



Stowing

1. Remove Feet stakes if present.
2. Raise upper frame cranking clockwise until all cables are slack.
3. Remove all cables and stow back in storage drawer.
4. Rotate stabilizers legs to upright stored position and secure each with retaining lanyard.
5. Lower upper frame completely.

Feet Adjustment / Leveling

Each foot can be individually adjusted to account for all types of unlevel terrain.

The Bullseye Level on top of the SatRunner can show the tilt in two planes.

In order to read the level, look at the marked circle in the center and note the position of the bubble. The bubble will always travel to the higher side.

A leveled bullseye will show the bubble in the very center of the smallest marked circle. If your unit is not level, the bubble will be seen outside the center of the circles. Observe where the bubble rests and then raise the side opposite the bubble in order to bring the unit closer to level (bubble dead center).

i Leveling is only required for mast deployment. The satellite system automatically adjusts if the system is unlevel.

Runner

Feet Adjustment / Leveling *Continued*

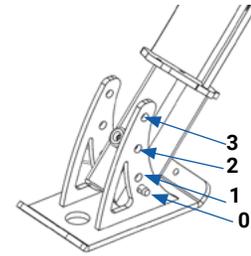
The level has three circles to indicate the degrees from level. Each Circle corresponds to a needed pin hole to reach level.

- Circle 1: 0.5°
- Circle 2: 3.0°
- Circle 3: 5.5°



Steps for Leveling

1. Begin with the Stabilizer Feet pinned to the leg through the very bottom (zero) hole. Deploy the Stabilizers.
2. Lower all stabilizer legs to ground.
3. Elevate upper frame by rotating Clockwise until all feet are above the ground.
 - a. Ensure legs are fully pivoted in lowest position.
4. Lower SatRunner by rotating Counter-Clockwise until the first foot touches the ground.
 - a. This can happen to multiple feet simultaneously depending on levelness of ground
5. With remaining feet not contacting ground, remove foot pin and install to closest pin hole that places foot in contact with ground.
 - a. If top hole (3) does not reach the ground, you must find more level ground to appropriately level the SatRunner.
6. Deploy the Stabilizers, page 24.
7. Once the weight is on the stabilizer legs, recheck the Bullseye Level and verify level.

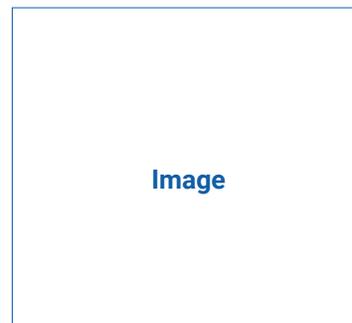


Skid Loading

The operation of skid loading allows you to load or unload from a pallet or skid.

The operation is very similar to deploying the stabilizers for stability with a different cable configuration.

1. Position SatRunner with enough room where a pallet can be maneuvered around the unit.
2. Use the Lift Handle to raise the Runner ~12" (from fully lowered).
3. Obtain 4 Red and 2 Black Cables from the drawer inside the unit.
4. Connect one end of a Red Cable to the slot in the bottom of the UpperFrame and then hook the other end into the slot on the Stabilizer Leg. Repeat for all four corners. Photo of red cables
5. Connect one end of Black cable to Stabilizer leg slot, and other end to opposite Stabilizer leg slot. Repeat for other side.
6. Once the Cables are secured on all ends, Lower the Upper Frame cranking counterclockwise until all the Cables are Taut and wheel are just off the ground.
7. Rotate both sets of wheels to their ground clearance UP position. Refer to page 18.
8. Slide pallet underneath SatRunner.
9. Expand chassis lowering the Lower Frame onto the pallet until no load is on the stabilizer legs.
10. Remove all cables and stow in storage drawer.
11. Stow stabilizers legs in stored position.



Pod

Enclosure & Frame

Overview

The Enclosure of the SatRunner houses all electronic equipment. Inside is a vibration damped 19-inch rack mount to which the equipment is securely mounted. It is secured with four lockable latches for a tight seal.

Latches & Locking

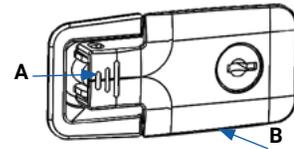
The enclosure has both front and rear doors for easy access to all wiring and equipment. There are two lockable latches per door for a secure seal.

Opening Enclosure Latch

1. If locked, unlock with key provided.
2. Press on ribbed section to release latch pressure [A].
3. Use pop-out lever [B] to rotate 90°.

Closing Enclosure Latch

1. Close door.
2. Rotate latch 90° for cam lever to clamp behind sealed wall.
 - a. Slight pressure on the door may be needed to compress seal to allow latch to rotate.
3. Close lever.
4. Lock latch



Power System

Power Control Module (PCM)

Overview

The PCM is the rack mounted unit at the very bottom of the rack and handles all power, alarms, and controls for the SatRunner.

Acceptable Power Sources

The SatRunner can handle a multitude of different power sources.

AC – 120V / 15A (1875W)

- Shore power (Standard 120V)
- Generator Power

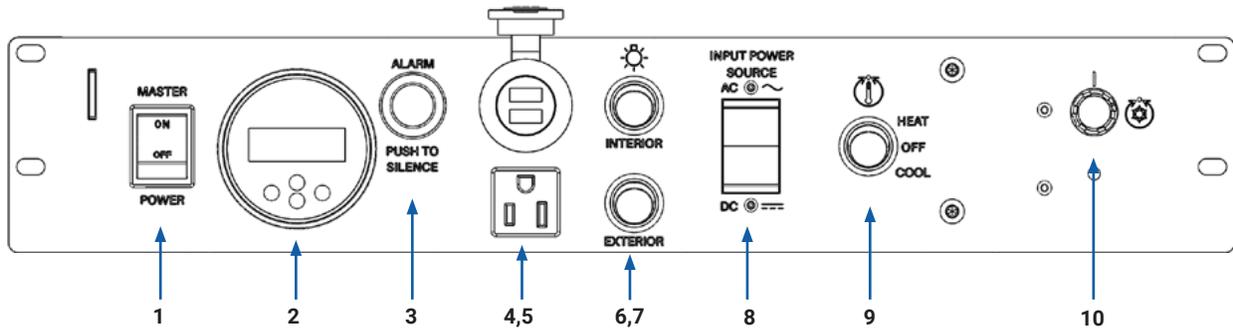
DC – 12-14.6V / 30A (438W)

- Vehicle Charge Harness
- External Batteries & Vehicles
- Solar Panel(s)

Pod

Controls

- | | |
|------------------------------|-----------------------------|
| 1. Master Power Switch | 6. Interior Lighting Switch |
| 2. Battery Monitor | 7. Exterior Lighting Switch |
| 3. Alarm Silence Switch | 8. Source Power Selector |
| 4. 5V USB Power Outlet | 9. Heat/Cool Switch |
| 5. AC Receptacle | 10. Cooling Thermostat |
| a. For Charging Phone/Laptop | |



Master Power

The Master Power Switch controls power for the entire system. Turning the switch 'On' powers all 12VDC components and enables the inverter/charger unit to power all AC components.

Battery Monitor

The battery monitor gives a complete look at the status of the battery. This includes whether the system is being charged from outside source, operating off internal battery, alarm state conditions, temperature, State of Charge.

Lighting - Interior

Inside the Enclosure, the Rack Mount has an integrated LED Light Strip to illuminate the rack and fold-out door for both front and rear. The Interior Lighting can be switched on with the designated switch located on the front panel.

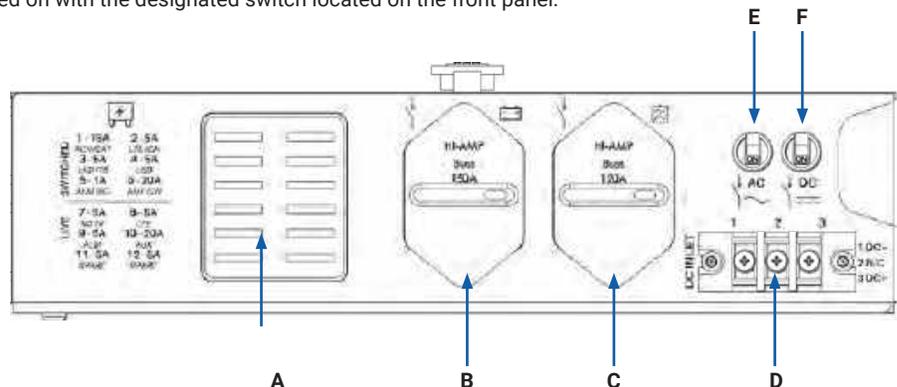
Lighting - Exterior

Four LED Light Bars are mounted at the top of the SatRunner Box (one on each side) and are used to illuminate the unit and immediate surrounding area.

The Exterior Lighting can be switched on with the designated switch located on the front panel.

Circuit Protection

- Fuse Box [A]
- Circuit Breaker Battery [B]
- Circuit Breaker ICU [C]
- DC Input Block [D]
- Circuit Breaker AC Inlet [E]
- Circuit Breaker DC Inlet [F]



Pod

Fuse Box

⚠ Never attempt to repair a blown fuse until the cause has been identified and properly repaired. Never replace a fuse with a substitute of another color or amperage rating, this could lead to a circuit overload, ultimately resulting in a fire in the SatRunner.

Information on the fuses can be found in the specifications section page 32.

Fuses 1-6 are controlled from the master power switch.

Fuses 7-12 are connected to the +12VDC bus bar.

High Current Circuit Breakers

The two high current circuit breaks protect the battery wiring, and DC wiring to the ICU.

If tripped the yellow swing arm will rotate downward into view. To manually trip the breaker (operate as a switch) press the red button fully until yellow trip arm is exposed.

To reset breaker, rotate yellow trip arm back up into nested position.

Circuit Breakers

The two white handle breakers protect the incoming AC and DC sources. If tripped actuator the actuator moves positively to the OFF position.

To reset breaker, flip up actuator to ON position.

DC Accessory Port

Located on the right side of the PCM (next to the battery) are all the break-away connections for system wiring. One port (#4) is left open for future DC equipment additions.

Manufacturer: TE Connectivity

Description	Manufacturer Part #
Connector 1x3 Key D	4-1971773-3
Terminal 12 AWG Tab	1971780-1
Terminal 14 AWG Tab	1971782-1
Terminal 16-19 AWG Tab	1971784-1

Wiring:

Pin 1: +12VDC Switched

Pin 2: +12VDC Battery

Pin 3: Ground

Fuse	Rating	Description
1	15A	Air Con/ Heater
2	5A	Cradlepoint IGN
3	5A	LED Lighting
4	5A	USB Outlet
5	1A	Alarm Signal
6	20A	Accy +12V Switched
7	5A	Master Power Ctrl
8	5A	Cradlepoint +12V
9	5A	Alarm Power
10	20A	Accy +12V Battery
11	5A	Spare
12	5A	Spare

Pod

Inverter/Charger Cabinet

The Inverter Charger Cabinet holds the ICU [A], Fan Control Panel [B], and Cooling Fan [C], and two air filters and is NEMA 4X rated and should not need be accessed under normal operation.

Inverter/Charger

The inverter/charger provides up to 1000 watts of continuous utility grade, sine wave power derived from the onboard battery. The built-in transfer switch automatically transfers between inverter power and outside power from commercial to generator sources to ensure power is always available.

The inverter/charger comes preconfigured for your SatRunner. In the event of a complete settings reset refer to the default configuration on page 32.

Cooling Fan

A cooling exhaust fan is installed to protect the Inverter/Charger from overheating.

The fan is controlled by the two switches near the bottom of the cabinet. One switch is the Exhaust fan ON/OFF and the other switch controls the whether the exhaust fan is auto set by the Thermostat or always ON. [AUTO/ON] & [ON/OFF] To reset breaker, rotate yellow trip arm back up into nested position.

In its default configuration the fan is set to ON and AUTO. This will automatically turn on the fan at a set point of approximately 104°F (40°C), and turn off when below 86°F (30°C).

The circuit breaker next to the switches protects the fan circuit. It is a push-toreset type of circuit breaker.

In the event the SatRunner is stored in a hot location (above 104°F) the fan will turn on even when not powered on.

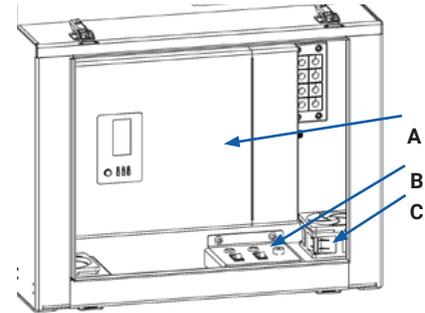
Alarm

The alarm system notifies users audibly and visually that there is fault condition with the SatRunner regarding the power system. The Alarm has two controlling inputs:

- AC Power Loss
- Battery monitor alarm state
 - Low/high voltage
 - Low/high temperature
 - State of charge

The Alarm Buzzer is located on the bottom of the Enclosure, the Siren on top of the antenna deck.

The Alarm is the same for all triggers.



Pod

AC Power Loss

The alarm condition for AC Power Loss applies when the Input Power Source switch on the front of the PCM is set to AC and there is no incoming AC power detected. This alerts the user that the SatRunner has switched to operating from the onboard battery and either Shore or Generator input power is not present.

i Be sure to verify the Power Inlet Selection Switch, refer to page 31, is set to correct Incoming AC Power Source (Shore or Generator).

There is no alarm monitor for incoming DC sources.

Battery Monitor

The included Battery Monitor is a Victron Energy BMV-712 Smart Unit, which has Bluetooth capabilities and can be accessed remotely via the “**VictronConnect**” smart phone app (free download).

VictronConnect has a full monitoring system which checks for alarms and errors. As soon as an alarm or error is reported, the alarm/error and its description are shown on the live data page.

⚠ Alarms and errors are only shown on your device when the app is active.

⚠ If battery is disconnected from monitor, the battery monitor will need to be resynced by fully charging the unit before showing correct State of Charge.



Victron Connect App Icon



Silence Button

The ‘Push to Silence’ button located on the front of the PCM next to the battery monitor allows you to snooze the siren and buzzer for three minutes during an alarm state. The button will remain illuminated even if pressed, and will only turn off when the alarm condition is removed.

The alarm silence timer resets everytime the button is pressed, even when actively silenced.

Cloud Notifications

When an alarm is triggered a signal is sent to the Cradlepoint router through its GPIO 1 on extender. The router may be programmed to send cloud notifications via email.

⚠ Network connection is required for cloud notifications.

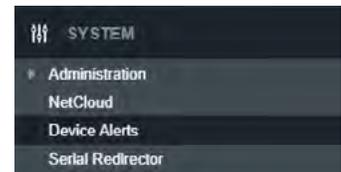
Email to text is available but carrier dependent through an SMS gateway.

is 10-digit phone number

Provider	Email Gateway
AT&T®	#@txt.att.net
Sprint®	#@messaging.sprintpcs.com
T-Mobile®	#@tmomail.net
Verizon®	#@vtext.com

Email Alert Setup

1. Login to Cradlepoint router.
2. Open System > Device Alerts.
3. Check SMTP box for GPIO State Change.
4. Set the maximum alerts/hr you desire.
5. Configure SMTP settings from your e-mail provider.
 - a. If using an SMS gateway select appropriate one for your cellular carrier
6. Save settings.



Pod

Alarm Override

In the rare event of a known alarm condition, complete deactivation of Siren & Buzzer can be achieved by removing the fuse from fuse box #9 position (Alarm Power). This should only be executed during situations of operational emergency.

During the override, the 'Push to Silence' button will still indicate if alarm condition is present.

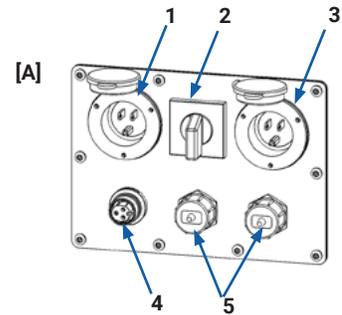
Power Entry Panels

There are three Power Entry Panels mounted on the enclosure that have a variety of power, networking, and signal connections.

1. AC Inlet PEP [A]

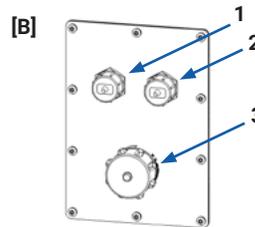
Located above the Inverter Charger Cabinet the AC Inlet PEP handles all incoming AC power and all power and signal lines that can be deployed on the mast. [A]

1. Generator Power Inlet
2. Power Inlet Selection Switch
3. Shore Power Inlet
4. AC Outlet
5. External Ethernet (x2)



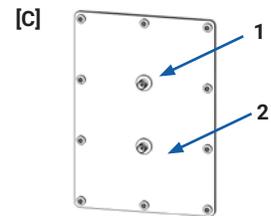
2. DC Inlet PEP [B]

1. External Ethernet WAN
2. External Ethernet LAN
3. DC Power Inlet



3 - Satellite PEP (WV750) [C]

1. Sat Terminal Power (CTRL) - RED
2. Sat Terminal Data (DATA) - BLUE



Climate Control

The heater / thermoelectrical air conditioner unit requires outside control based on the ambient environment of the SatRunner.

When powered the internal fan will always be on circulating air. The external fan will only turn on when the unit is actively cooling.

Controls

All controls are located on the front of the PCM. There is a control switch [1] that has three positions, HEAT, OFF, & COOL, and a thermostat knob [2] to control the set point of the cooling. The number on the knob correlates to temperature in Fahrenheit.

Cooling

The set point you choose on the thermostat should be based on the desired internal temperature of the enclosure. The AC will run until the set temperature is achieved within the enclosure.

For optimal energy usage do not set the thermostat below 80.

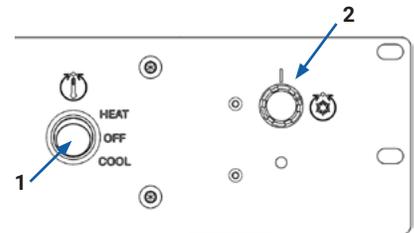
Heating

When the switch is set to 'HEAT', the unit will power a 100W heating element. There is not an adjustable temperature setting for the heater.

Setting

There are many factors that affect set-points of when to cool or heat. We recommend when the ambient temperature is below 32°F (0°C) to turn on the heater, and when above 86°F (30°C) to turn on the air conditioner with a set point of 80°F.

You can read the current temperature inside the enclosure from the Victron Battery Monitor.



Pod

Condensate Drip Line

A condensate drip line from the unit is fed through the bottom of the enclosure. Ensure this line does not get clogged or water build-up will occur inside the unit, possibly splashing sensitive electronic equipment.

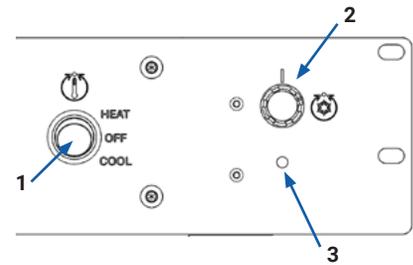
Cooling Thermostat Adjustment

If the AC does not turn on when expected, adjustment may be necessary. Right below the Cooling set point knob is an access hole [3] to the adjustment screw.

⚠ Do NOT overtighten adjustment screw or damage may occur.

Step to Adjusting:

1. Using separate thermometer measure ambient temperature.
2. Set cooling set point knob to reading from thermometer.
3. Using small flathead screwdriver press lightly on screw head.
 - a. If audible click is heard you will rotate clockwise in step 4.
 - b. If no audible click is heard you will rotate counterclockwise in step 4.
4. Do not apply force in on the screw in this step! Rotate screw direction from step 3 until an audible click is heard and promptly stop.
5. The thermostat is now calibrated to within approximately 5°F.



Generator & Fuel System

The included generator is used to power the SatRunner when Shore Power (a Plug-in Outlet) is not available. Familiarize yourself with the generator and its operation.

⚠ READ the included Honda EU2200i Generator Manual BEFORE USE.

The Auxiliary Fuel Tank holds 6 gallons and is connected to the Generator by a Vacuum Feed Line with Quick Disconnect.

With the Auxiliary Fuel Tank, the Generator is estimated to run for 60 hours under nominal load.

⚠ Disconnect the feed line before refueling the auxiliary tank.

Generator Storage

⚠ The generator weighs 46+ lbs. Lift with care!

The generator securely stows into the locked area of the exoskeleton next to the auxiliary fuel tank. The tray has four slots that lock around the generator's feet. When the door is closed the generator is locked in place.

1. Point electrical ports into the SatRunner with exhaust pointing towards the door.
2. Lift generator into fuel area.
3. Align four feet with slots on the tray.
4. Slide completely into place.
5. Secure door closed.
 - a. If door does not fully close the generator is not completely seated into slots.

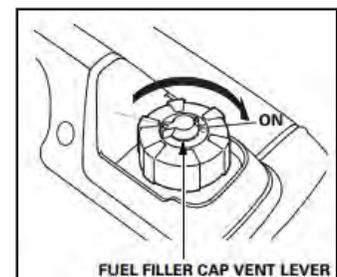
The electrical panel on the generator is inaccessible while fully stowed inside the SatRunner. This is a security feature to prevent unwanted changes to the system. If access is needed you need to open the door and slide the generator back.

Starting the Generator

The generator can be operated on the SatRunner for a compact deployment or remotely. The access ports on the exoskeleton give full access to the choke, start switch, and starter grip. **[Refer to images to the right]**

1. Position the generator on a level surface.
2. Make sure the generator has enough Fuel and Oil before attempting to start.
3. Make sure all appliances are disconnected from the AC receptacle.
4. Turn the fuel filler cap vent lever to the ON position. If door does not fully close the generator is not completely seated into slots.
 - a. This is located on auxiliary fuel tank if using extended run system.

[4]



Pod

Starting the Generator *continued*

5. Make sure the Eco Throttle switch is in the OFF position, or more time will be required for warm-up.
6. To start a cold engine, move the choke lever to the CLOSED position. To restart a warm engine, leave the choke lever in the OPEN position.
7. Turn the engine switch to the ON Position.
8. Pull the starter grip lightly until you feel resistance; then pull briskly.
9. If the choke lever was moved to the CLOSED position to start the engine, gradually move it to the OPEN position as the engine warms up.
10. If you wish to use the Eco Throttle system, turn the Eco Throttle switch to the ON position after the engine has warmed up for 2-3 minutes.

Auxiliary Fuel Tank

Storage

The fuel hose is long enough to place the fuel tank on the ground while still connected to the generator.

The fuel tank can mount in either direction

The auxiliary fuel tank stores in a similar manner as the generator. The rear flange on the fuel tank slides under the rear support bracket.

Refueling

Always remove fuel tank from SatRunner and place on level ground for filling.

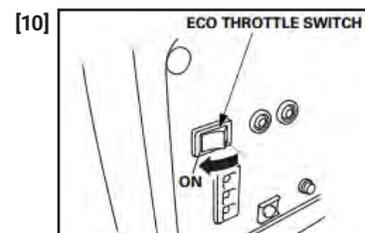
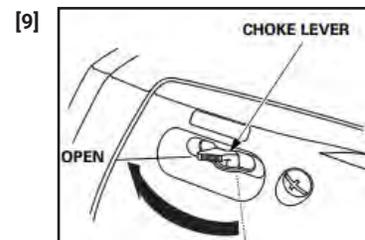
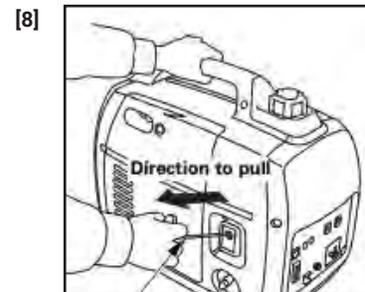
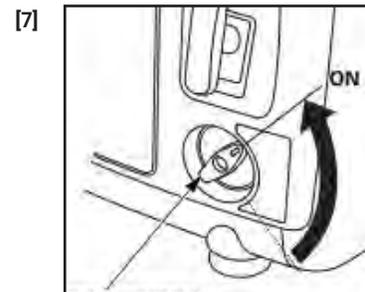
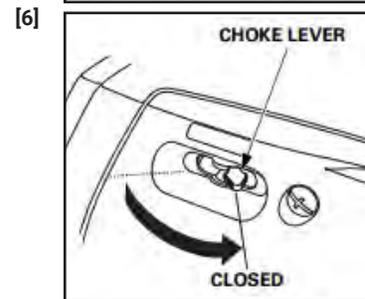
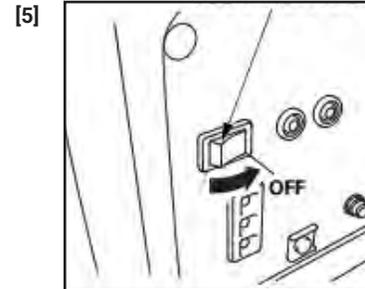
For refueling fuel tank follow the following guidelines: You can read the current temperature inside the enclosure from the Victron Battery Monitor.

- Remove fuel filler cap slowly as the tank may be pressurized.
- Fill container no more than 95 percent full to allow for expansion.
- Place cap on tightly after filling.
- Keep nozzle in contact with rim of the container opening to decrease the chance of static electricity buildup.

Extended Runtime

In extreme circumstances it possible to extend the runtime of the SatRunner system well passed the expected 60 hours to up to xxx hours by following this process.

1. Fully deploy SatRunner.
2. Run system on generator power until battery is fully charged.
3. Stop generator.
4. Run on battery power until ~25% SoC remaining.
5. Start generator to fully charge battery, approximately 1 ½ hours depending on house loads.
6. Repeat steps 3 to 5.



Pod

Wireless & Networking

All network operations and access are handled through the Cradlepoint router through its NetCloud OS (NCOS) interface.

Logging in to Your Cradlepoint

There are two ways of logging into the router for status updates and/or configuration changes.

Local Access

If you have direct access to the Cradlepoint you can login over Wi-Fi or a direct ethernet connection.

Open a web browser and browse to <http://192.168.60.1>

Factory default login credentials for your router are labeled on the rear of the router.

Cloud Access

Cloud access is managed through Cradlepoint's NetCloud Manager (NCM). Simply login at cradlepointecm.com using your NCM credentials.

If your device has not yet been loaded into your NCM account, you need to register your device. Log into NetCloud OS (NCOS) locally and click on the NetCloud Logo. Click the Register Router button, enter your NetCloud username and password, then click the Register Router button in the Register Router with NetCloud dialog.



Netcloud Logo

i In order to make changes to the router through NCM the router must be online and connected to the internet.

Default Configuration

Your Cradlepoint router comes with some settings preconfigured that are required for full SatRunner operation.

Networking Configuration

Standard configuration of the networking ports is one (1) WAN and four (4) LAN ports. LAN port 4 is reconfigured as the Satellite IP WAN port.

Default IP network access from Cradlepoint factory is 192.168.0.1. This gets modified to 192.168.60.1 to avoid common problems with network connections between routers using the same gateway.

Client Data Usage is enabled to allow for monitoring individual device data usage for quick identification of excessive network usage.

Connection Manager Configuration

The WAN source for VSAT IP is set to last priority. This prioritizes traffic towards less expensive data sources. WAN Verify for VSAT is enable to active ping 8.8.8.8 to verify connection is established before relying on it for active IP backhaul.

System Configuration

GPIO configuration is modified for proper power cycling of the Cradlepoint and alarm state monitoring.

The router is wired directly to the battery and uses an ignition sense wire (master power switch) to listen for when the router should power on. This feature allows the router to perform a safe shutdown procedure when the SatRunner is depowered. The router will remain on for 120 seconds after shutdown. This is controlled by GPIO '5 on expander'.

The router is wired directly to the battery and uses an ignition sense wire (master power switch) to listen for when the router should power on. This feature allows the router to perform a safe shutdown procedure when the SatRunner is depowered. The router will remain on for 120 seconds after shutdown. This is controlled by GPIO '5 on expander'.

Alarm monitoring is set on GPIO '1 on expander' and has an alert trigger state of high. Default delay is for 30 seconds to avoid false alerts.

Pod

Status Monitoring

Add information about viewing client data usage from 'Status' section.

Patch Panel

The patch panel brings all ethernet connections throughout the enclosure to one easily accessed position. This makes network configuration changes quick and easy.

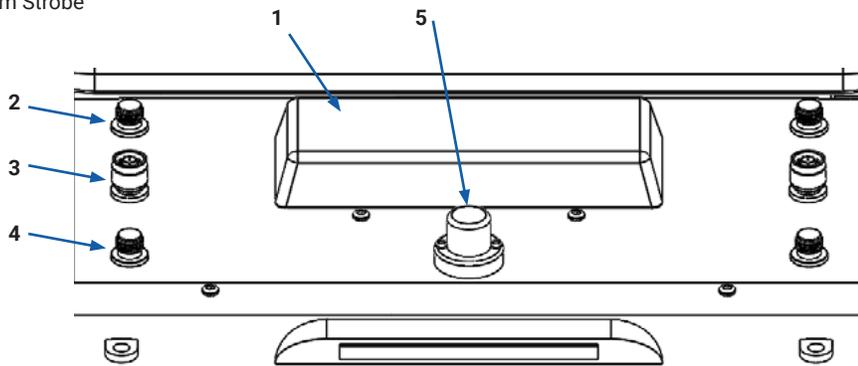
Default Map

The default patch panel configuration is color coded. Make the connections between like colors and feed the IP out (blue) ports to the desired location.

Antennas

The antenna deck has numerous antennas for LTE, Wi-Fi, and GPS connectivity.

1. 7-in-1 Antenna
2. Auxiliary LTE Ports
 - a. For optional LTE Radio
3. Wi-Fi
 - a. Connected to Radio 2 on Cradlepoint
4. LTE
 - a. Connections to secondary LTE modem for Cradlepoint
5. Alarm Strobe



The 7-in-1 antenna contains four Wi-Fi 2.4/5Ghz, two LTE, and one GPS. All of these leads go directly to the Cradlepoint router.

Antenna Setup

The SatRunner comes pre-equipped with two LTE antennas for a secondary modem, and two high gain Wi-Fi antennas for additional network access through Cradlepoint.

- Always replace caps and plugs on antenna bulkheads to protect from the elements!
- Use caution to avoid cross-threading on bulkheads and antennas.
 1. Remove antennas from StorageDrawers.
 2. Connect Wi-Fi antennas to center two bulkheads [3].
 3. Connect LTE Antennas to endbulkheads [4].

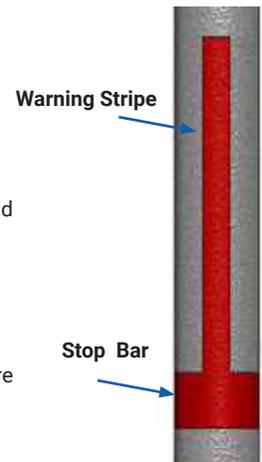
Mast

- ALL Guy Wire Connections MUST be a safe distance from Power Lines.
- The SatRunner™ MUST be deployed a minimum distance of 2x the height of the mast from any overhead lines.

Deploying

- Do NOT overextend mast.

Caution must be used to not overextend the mast. There are warning stripes and a Red Stop Bar on all telescoping mast sections. The warning stripes can be visible while the mast is deployed. They are there to notify you the maximum extended distance is approaching.



Pod

Deploying *Continued*

1. Make sure the Mast is secured properly. Tighten the two Mast Mounting Clamps.
2. Level & Stabilize the SatRunner (page 24).
3. Attach the bracket and antenna setup you want on top of the deployed mast.
4. Attach Guy Lines to Mast.
5. Undo the top mast Clamp by rotating the lever UP and use your hands to extend the top pole.
 - a. Do NOT overextend. Pay attention to the Warning Stripes and the Red Stop Bar.
6. Pivot the locking lever DOWN to secure the extended section of the mast.
7. Repeat step 5-6 for the rest of the
8. The Mast should not ever be extended to a point that the Red Ring is showing on the pole. The red Stop Ring must be below the top of the next clamp.

Fiberglass Clamp Adjustment

The quick clamps on the Fiberglass Mast can be adjusted for clamp force.

1. Fully stow mast before proceeding.
2. Open clamp by lifting lever into vertical 'up' position.
3. Turn screw using a #3 Phillips screwdriver counterclockwise until clamping ears are providing some resistance to the inner tube.

Stowing

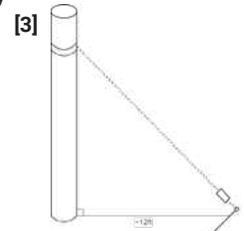
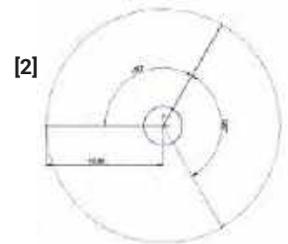
- ⚠** Securely hold mast tubes before releasing clamp force. Rapid decent can result in injury and/or damaged equipment!

Stowing the mast is the opposite of deploying, starting with the largest diameter and working towards the smallest.

Guying

The quick clamps on the Fiberglass Mast can be adjusted for clamp force.

1. Retrieve the Mast Guy Wire Stakes.
2. Find three spots approximately 12' from the Mast. They should be roughly 120° apart.
3. Drive the stakes into the ground at a ~45° angle, away from the Mast.
4. Obtain the three Guy Cables from the Accessory Bag.
5. Securely fasten rope end to one of the three points on the Mast Guy Ring.
6. Hook a Tensioner to each Stake and pull Guy Line through it. Leave the line with enough slack to fully extend the mast.
7. Extend the Mast to desired height (page 39).
8. Tension all three Guy Lines.



Leveling

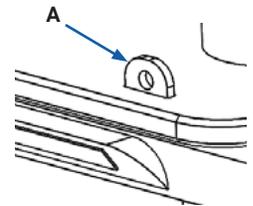
- ⚠** The mast must be deployed with the SatRunner level. The bullseye level is used to get the SatRunner level prior to deploying the mast. For leveling operations see page 23.

Locks & Security

The Keys provided operate all locks on the SatRunner. One is a spare and its recommended to have it in an accessible spot in case it is ever required during an emergency.

Satellite Board

The Satellite may be locked to the top of the pod. A lock is not provided, but mounting points are in place [A].



Travel Security

Recommended operations for security while traveling is the following:

- Lock all doors
- Lock the Satellite Board to the Pod
- Use a chain to lock the SatRunner to the Vehicle. (Attach the chain to the vehicle's frame and through the SatRunner lower frame)

Pod

Satellite System

The WV750 antenna is an auto acquire and auto stow system and accommodates the eTRIA supplied by Viasat.

The WV750 antenna system consists of a high wind resistant mechanical antenna, Outdoor Unit (ODU) and all wiring and motors required to point the system using the

Winegard 2-Way Controller.

BEFORE USE, READ the included Winegard WV750 Satellite Antenna System Product Manual.

The Satellite Antenna emits a cone of radiation. DO NOT setup anywhere people may walk or work in front of.

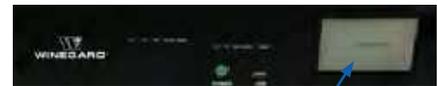
The Winegard Antenna MUST have a clear view of the Southern sky in order to establish a proper connection.

Deploying Satellite

Refer to Winegard WV750 Owner's Manual for complete information.

For support regarding internet connectivity reach out to your Satellite Internet Service Provider.

1. Fully stabilize SatRunner
2. Ensure the deployment location is on level ground and has a clear view of the Southern Sky.
 - a. Use compass on satellite board for quick heading.
3. Turn on the RED SatRunner Master Power Switch.
4. Wait 10 seconds, then turn on the Winegard WV750 controller by pressing its small green power button [A].
5. Allow the Winegard WV750 controller to boot up and gather its heading. The process can take several minutes.
6. Press the Large green button on the Winegard WV750 controller screen [B] that is labeled "Find Satellite".
7. The Winegard WV750 Dish will begin moving and search for the satellite. This process can take several minutes. When the screen on the Winegard controller looks like this you are connected.
 - a. You will hear beeping tone from the TRIA that indicates signal search status is functioning.



Stowing

1. Make sure there are no obstructions in the way of the antenna.
2. Press the "Stow Antenna" Button.
3. Antenna will break connection and stow into locked position.
4. When the antenna is finished stowing, the screen will return to the Main Menu with the Find Satellite button enabled (Green).
 - a. DO NOT turn off controller or Master Power until the system returns to the Main Menu Screen.

Compass

The compass located on top of the satellite board will give an approximate heading to assist in initial positioning. The index mark on the compass identifies the direction the compass is pointing.

Compensation

Follow manufacture specifications for alignment and compensation.

Remote Satellite Deployment

In certain situations, it may be advantageous to dismount the Satellite Flyaway Board from atop the unit and set it up in a location away from the deployed SatRunner.

The Satellite emits a 'cone' of radiation. Be sure to set up the Satellite in a spot where no persons will be directly its path. It is recommended the area around the Satellite is taped off or restricted.

Pod

Remote Satellite Deployment *Continued*

The included extension cables in the Accessory Bag are 100ft long. For longer cable runs please consult the manufacturer.

Deploying Remote Satellite

Do not remove the Satellite Board until you have found a safe and level spot for deployment.

1. Use the Lift Handle to lower the SatRunner as low as possible.
2. Unscrew the four (4) black knobsthat secure the Satellite Board ontop of the Pod.
3. Disconnect the two (2) cables attached to the Satellite PEP. (One) RED and one BLUE.
4. Remove lock securing board to SatRunner if present.
5. **TEAM LIFT** the board and place it in an appropriate deployment spot,as described above.
6. Place the Satellite Flyaway Board onto the firm, level surface.
7. Use Sandbags (or equivalent) to secure the corners of the Board.
8. Connect the Extension Cables from Accessory Bag to the outlets on the Enclosure, then route the extended cables and connect the opposite ends to their respective ports on the Satellite.
9. Follow Deploy Satellite Procedure on page 42

Stowing Remote Satellite

1. Perform the Stow Antenna process on page 43.
2. Disconnect the two (2) Extension Cables. (One RED and one BLUE) Coil and stow back in the Accessory Bag.
3. Remove the sandbags (or equivalent) used to hold down the board.
4. **TEAM LIFT** the board and place it back on top of the Pod.
5. Use the Four (4) Black Knobs to screw the board back onto the top of the Pod.
6. Connect the two (2) original, short cables back into their respective connections on the Satellite PEP.

Replace lock securing Satellite Board to SatRunner if necessary.

Procedures

Connecting Outside AC Power

- ▲ Electric shock hazard if system not properly powered. If you are unsure always consult a qualified electrician.
- ▲ If AC power source is neutralground bonded, connect to Shore Power inlet. Do not connect to generator power inlet or a hazardous ground loop will be created!

The SatRunner power system grounds differently depending on what AC power is available. The neutral-ground bond is completed at the source of Shore power. The onboard generator is neutral floating and does connect the neutral to AC receptacle ground pin. The SatRunner accounts for this and adds the bond internally.

If the system is on during this process the alarm will become temporarily activated as the ICU is verify the AC connection is stable before switching back from battery to AC source.

Connecting Shore Power

Powering from Shore

1. Switch Input Selector Switch set to the 'OFF' position. (Refer to page 31).
2. Fully Insert the Power Cable into the RIGHT side Shore Receptacle.
3. Rotate switch right to Shore position.
4. Switch the Input Power Sourceswitch on PCM to the 'AC' position.
 - a. It will take approximately 20 seconds before charging takes place. This is intentional by the ICU to verify the AC source is stable.

Depowering from Shore

1. Switch the Input Power Source switch on PCM to 'DC' position.
2. Turn the Input Selector Switch to the 'OFF' position.
3. Disconnect the AC Inlet Power Cable.
4. Replace cover over receptacle withthe attached rubber cap.

Procedures

Connecting Generator Power

Powering from Generator

1. Switch Input Selector Switch set to the 'OFF' position. (Refer to page 31).
2. Insert the Generator Power Cable into the LEFT side Receptacle. (Labeled GEN)
3. Make sure the Cable is fully inserted.
4. Once you are ready to power the unit and have verified your connections are secure, move the selector switch to the 'GEN' position.

Depowering from Generator

1. Switch the Input Power Sourceswitch on PCM to 'DC' position.
2. Turn the Input Selector Switch to the 'OFF' position.
3. Disconnect the AC Inlet Power Cable.
4. Replace cover over receptacle with the attached rubber cap.

Connecting Outside DC Power

-  Electrical hazard! Do not connect any voltage greater than 14.6VDC!

The SatRunner™ includes a 30A 12VDC charging / power inlet. This allows external DC sources to power the unit including carrying vehicle, external battery bank, solar array, etc.

Connecting Vehicle DC Power

Included in the Accessory Bag is a charging harness that connects to a standard 7-pin connector that is included on many vehicles with towing packages.

1. Connect 7-pin connector to carrying vehicle.
2. Connect 4-pin connector from Lower Frame to pigtail from 7-Pin to operate Stop-Turn-Tail lights.
3. Connect 2-pin connector to SatRunner™ pod DC Inlet Port (page 32).

Connecting External DC Power

-  Do not short bare wire terminals! Electrical shock hazard!

AC power is the preferred power to operate the SatRunner. If AC power is not readily available external DC power can also be used. Including but not limited too battery or battery bank, alternator, solar array, etc.

1. Remove 7-pin connector from charging harness.
2. Connect white wire to +12VDC and black to -12VDC.

Choosing a Deployment Location

- The SatRunner should be deployed on firm, level ground. If the deployment area is not level, you may have issues when extending the Mast or deploying the Satellite.
- The Satellite must have a clear view of the Southern Sky. Obstructions will affect Satellite performance.
- The LTE and Wi-Fi Antennas perform best without obstructions (such as trees, mountains, buildings or tall vehicles). Clear Line of Sight in all directions will optimize the range of the signal.

Cold Start (Below -20°F)

The process to start your SatRunner when temperatures are below -20°F, but above -30°F, are as follows:

1. Turn the generator around pointing the exhaust onto the Invert Charger Cabinet.
2. Plug in generator to Generator AC inlet and position selector switch to OFF.
3. Start generator and wait ~15 minutes.
4. Rotate selector switch to generator. 47
5. Inverter Charger will start battery heating element.
6. Turn master power switch on.

Procedures

Low Power Operation

To extend runtime, particularly when operating from external DC sources or the internal battery, all unnecessary loads should be removed or deactivated. These include:

- Generator operating in ECO mode.
- USB and Laptop charging ports
- LED Lighting
- Ambient temperature dependent:
 - AC/Heater turned OFF and operate with doors open.
 - ICU Cooling fan disabled. Operate with ICU door open

In extreme situations additional measures can be taken. These include:

- Pull Fuse #1 to disable Air Con / Heater fully
- Once fully deployed, move patch cable from Satellite Modem (MDM) directly to WAN 2. You can now depower the Satellite controller without loss of IP.

Mast Antenna (LTE Radio)

 Do NOT overextend mast!

1. Attach the Dual Antenna Mast Bracket from Accessory Bag to the mast head.
2. Secure the Bracket to the top of the Mast with the included hardware.
3. Rotate antennas into upright position.
4. Use the Coaxial Extension Cables from the Accessory Bag and attach one end to their respective connections on the bottom of the Mast Bracket.
5. Make sure the Mast is secured properly. Tighten the two Mast Mounting Clamps.
6. Attach guy lines if necessary (page 40.)
7. Deploy Mast to desired height (page 39) while routing cables gently around mast.
 - a. Secure cable to mast with twistties or cable ties to prevent excessive wire strain from swaying.
8. Connect opposite end of extension cables to their appropriate bulkhead on the antenna deck.

Add note on top bracket screw (install last, remove first)

Deployment Scenarios

This section does not go into detail on how to complete specific operations or procedures, but a larger picture on how to use the unit with all the pieces combined. Refer to specific sections for subsystem instructions.

Standard Deployment

The standard deployment involves getting the SatRunner stabilized, powered, and online. Stabilize the unit, leveling if necessary. Refer to page 22.

Tactical Deployment

Remote Deployment

Specifications

This section covers the SatRunner in all possible configurations. Some features may not be included in your unit.

Serial Number

The Serial Number for each SatRunner product can be found on the lower crossbar of the scissors as viewed from the steering end. The Serial # on the SatRunner Label is the Master Serial given by Rescue 42. The SatRunner™ Serial must be included in any contact to Rescue 42 regarding the unit.

Photo of Serial # on plate local

Dimensions

The onboard battery is a special Low Temperature Series that can safely charge down to -4°F (-20°C). This is handled seamlessly by the battery using an internal heating element powered from the incoming charge.

Voltage	12.8VDC
Amp Hours	50Ah
Dimensions (LxWxH)	7.8" x 6.5" x 6.8"
Chemistry	LiFePO ₄
Charge Temperature	-4 to 113°F (-20 to 45°C)

Specifications

Battery Monitor

The Battery Monitor default settings have been modified from their factory original to the equipment to match with the SatRunner. In the event of settings loss refer to this chart to revert back to defaults for your SatRunner.

Setting	Value
Battery Capacity	50 Ah
Charged Voltage	13.6 V
Tail Current	4.0%
Charged Detection	3 min
Puekert Exponent	1.05%
Charge Efficiency Factor	99%
Current Threshold	0.10A
Time to Go Avg Period	3 min
Relay Mode	DFLT
Auxiliary Input	Temperature
Low Voltage Alarm & Relay	11.1 On / 11.2 Off
High Voltage Alarm & Relay	15.4 On / 15.3 Off
High Temp Alarm & Relay	115°F On / 114°F Off
State of Charge (SoC) Alarm & Relay	15% On / 16% Off
Low SoC (Relay & Alarm)	20%-20%

Using the VictronConnect app, refer to page 22, for easy and fast setup.

1. Pairing procedure using Bluetooth, using the default PIN code 000000
2. Optional after connecting, the PIN code can be changed by pressing the (i) button in the top right corner of the app.
3. Settings can be modified by selecting the Gear icon in the top right.
4. Settings will sync automatically and can be verified by a green check after the setting is changed.

Specifications

Inverter/Charger

The Inverter Charger units comes programmed differently from the factory default settings. In the event of settings loss refer to this chart to appropriately reprogram per manufacture specifications.

Setting	Setting Name	Value
01	Inverter Ignition Control	AtO
02	LBCO Voltage	10.5
03	LBCO Shutdown Delay	300
04	LBCO Recovery Voltage	12.5
05	Power Save Time	25
06	Power Save Mode	dIS
07	Output Frequency	60
08	Output Voltage	120
09	Output Power Limit	1.0
10	Output Power Limit Timer	300
11	Transfer Mode	UPS
12	AC Under Voltage Level	90
13	Inverter Shutdown Recovery	AtO
14	Audible Alarm	bOn
20	Battery Type	USE
21	Battery Temperature	HOt
22	Absorption Voltage	14.4
23	Float Voltage	13.6
24	Charger Current	50
26	Charger Ignition Control	OFF
28	AC Input Breaker	30

Specifications

Inverter/Charger *Continued*

Changing Settings

To change the default value to a different value:

4. Press and hold the  button for three seconds to enter the feature settings mode.
5. Press the Scroll  button to move through the different feature settings.
6. Press the  button to select a setting number and change its value.
7. Press the Scroll  button to change the value until you reach the desired value.
8. Press the  button to confirm the change.
9. Repeat the previous steps to set other feature settings.
10. Press the  button to exit the feature settings mode.

Maintenance

Maintenance

Read these instructions carefully and then thoroughly inspect the equipment to become familiar with it before trying to perform maintenance. The SatRunner includes a 30A 12VDC charging / power inlet. This allows external DC sources to power the unit including carrying vehicle, external battery bank, solar array, etc.

Cleaning

It is recommended to clean the SatRunner of dirt and debris after each use. Soapy water and a shop rag will usually suffice but it is recommended to use a chamois or soft terry cloth in order to eliminate water spotting and scratching.

If washing with a hose:

- Remove the Generator and Auxiliary Fuel Tank
- Ensure the Front and Back Doors are Closed Properly
- Ensure the Inverter Cabinet is Closed Properly

Do NOT directly spray the Antenna with water. Handwash with a damp rag.

Storage

DO NOT store the unit when wet, dry off all components as much as possible before storing.

Generator

Refer to manufacturer's owner's manual for scheduled maintenance intervals, servicing procedures, and specifications.

Lubrication

The Hitch Adapter and thrust screw need periodic lubrication to keep components operating smoothly.

Lubricate Specification: NLGI Grade 2 Moly Grease

 Apply to the following:

- Thrust screw
- Hitch Adapter
 - PitchLok Holes
 - PitchLok Pins
 - Mounting Pin
 - Mounting Pin Receiver

Battery Replacement

Only replace battery with identical size and type. Refer to battery specifications on page.....

1. Switch off all circuit breakers.
2. Remove battery terminals starting with negative.
3. Remove the Winegard Controller.
4. Remove the PCM.
5. Remove Cradlepoint rack mount screws. Lift it up and out of the way.
6. Disconnect strap securing battery.
7. Remove Battery.
8. Reinstall in reverse order.

Maintenance

Maintenance

**Troubleshooting
Satellite**

Warranty

We warrant this product to the original purchaser to be free from defect in materials and workmanship for one year from the date of purchase. Please note that all warranty claims must be accompanied by an original proof of purchase in the form of a purchase receipt or invoice and a written detailed description of the defect. Any product or part found to be defective within that period will be replaced without charge provided that:

1. The product was not misused or overloaded;
2. No alterations or modifications were made;
3. Its failure resulted from a defect in material or workmanship and not from normal wear expected in the use of this product;
4. The product or part is delivered, freight prepaid to Rescue 42, Inc.

Please contact Rescue 42, Inc. at (888) 427-3728 / (530) 891-3473 to get a return authorization number prior to return. Manufacturer's only obligation shall be to replace such products or parts proved to be defective.

Rescue 42, Inc.

P.O. Box 1242

Chico, CA 95927-1242

Toll Free: (888) 427-3728

Business: (530) 891-3473

Fax: (530) 891-9255

E-Mail: info@ThePodRunner.com

www.ThePodRunner.com

(Contact Rescue 42, Inc. for a Physical/Shipping Address)

No warranty is given for PodRunner products outside of the United States and Canada. This warranty is expressly made in lieu of any and all other warranties, express or implied, including the warranties of merchantability and fitness for a particular purpose. Rescue 42's sole liability to any purchaser is limited to the remedy set forth above. In no event will Rescue 42 be liable for any lost profits, lost sales or for any consequential, direct, indirect, incidental, special or exemplary or punitive damages or for any other damages of any kind or nature.

Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitations may not be applicable. This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

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M

Maintenance 33

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M

Maintenance 33

Serial Numbers

SatRunner Components		
Item Desc	Serial #	MAC Addr
Chassis Enclosure		
PCM		
Air Conditioner		
Battery		
Battery Monitor		
Cradlepoint		
Generator		
Inverter Charger		
Satellite Controller		
Satellite Terminal		
Satellite Modem (Ka)		
Satellite TRIA (Ka)		
Satellite BUC (Ku)		
Satellite LNB (Ku)		
Cradlepoint Settings		
SSID		
IMEI		
MEID		

