

# SolarVu<sup>®</sup> Installation Guide For SunEdison System Replacement

## Introduction

SolarVu is an energy portal that enables remote monitoring of renewable energy generation sites over the internet. It requires the installation of a SolarVu gateway which continuously transfers data from the inverters, meter, weather station and other devices to the remote SolarVu servers. This guide will walk through how to replace the existing SunEdison system with SolarVu, including physical installation and device configuration.

## Cachelan Supplied

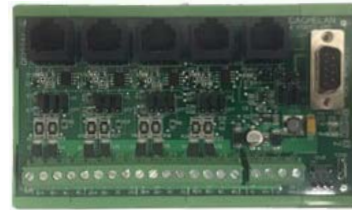
Figure 1 shows all the components which Cachelan supplies to the installer, including the following:

- M504 gateway (with DIN rail mounting feet) x1
- M504 Comm Module x1 (DIN rail mount)
- DIN Rail x2
- 3ft Ethernet cable (blue) x1
- 1ft Ethernet cable (white) x4
- 18 AWG wire in blue x2
- 18 AWG wire in grey x2

Fig 1. Cachelan supplied component



M504 Gateway x1



M504 Comm Module x1



3ft Ethernet cable (Blue) x1



1ft Ethernet cable (White) x4



DIN Rail x2

## Laptop Is Required

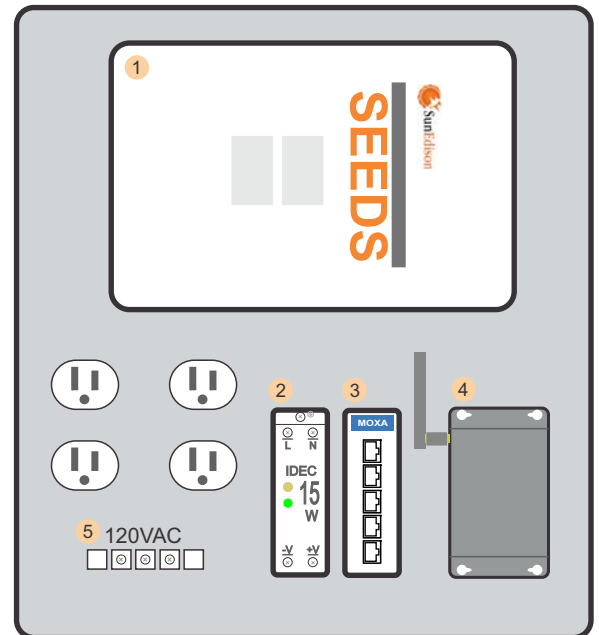
A laptop is required for the installer to do some on-site configuration change

## Physical Installation

Figure 2 shows a typical SunEdison SEEDS monitoring enclosure layout. SunEdison has more than 1 version of the enclosure layout based on the datalogger model. Other layouts look a little different but will apply the same installation procedure.

1. Find the power switch at the site and shut down the incoming 120VAC control power.
2. Take off the SEEDS datalogger, including its power dongle and Ethernet cable. Leave the RS485 comm. wires inside the enclosure (If there is any from the SEEDS datalogger).
3. As shown in figure 3, from Cachelan supplied component, install one DIN rail inside the enclosure and then mount the M504 gateway and the M504 Comm. Module on the DIN rail side by side as shown below.

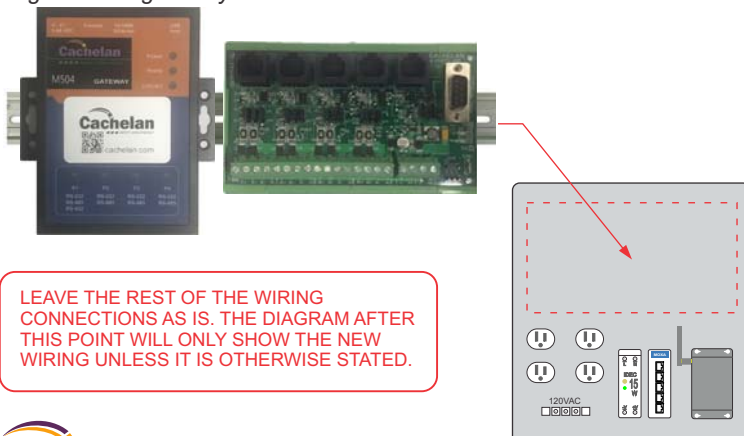
Fig 2. Typical SunEdison SEEDS enclosure



### DEVICE LIST

- |                        |                      |
|------------------------|----------------------|
| 1 SEEDS Datalogger     | 2 24VDC Power Supply |
| 3 MOXA Ethernet Switch | 4 3G Cellular Modem  |
| 5 120VAC Control Power |                      |

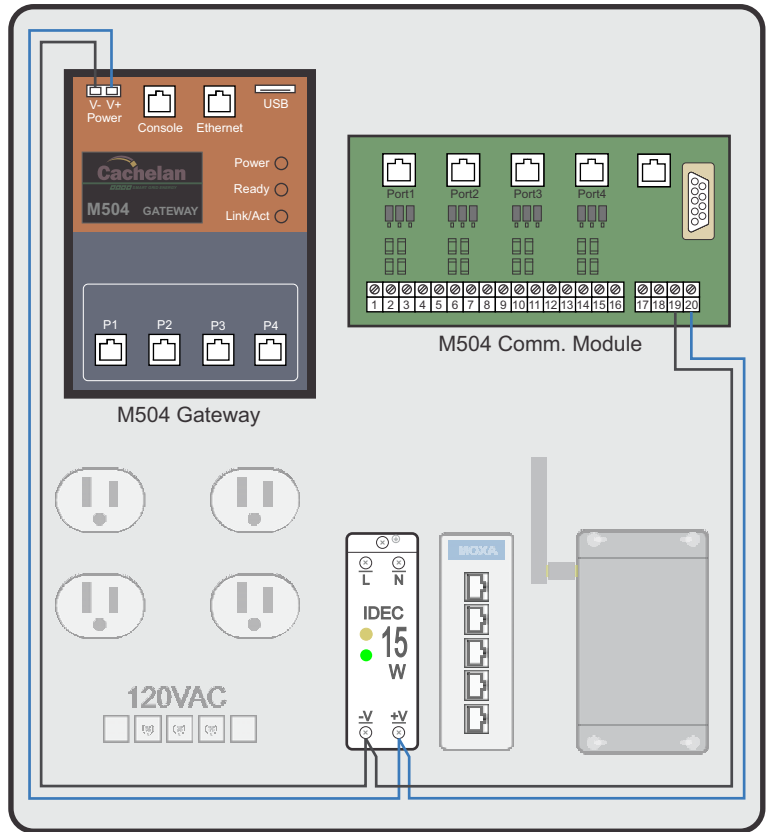
Fig 3. M504 gateway and comm. module installation



- As shown in figure 4, connect the blue and grey wires from the IDEC power supply +V and -V terminals to the M504 gateway Power terminal V+ and V- terminals respectively.

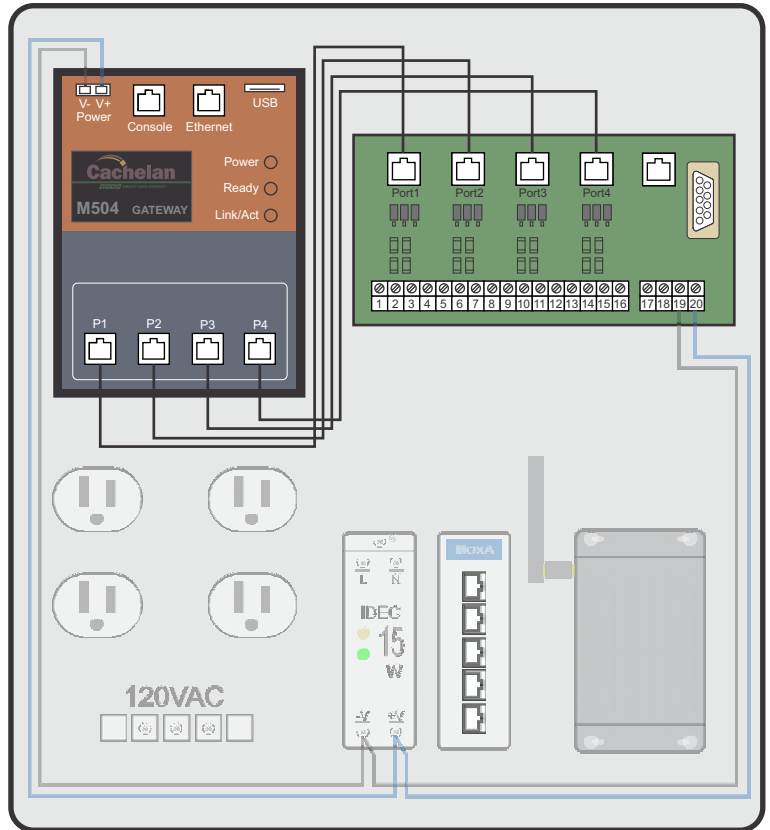
Then connect the other blue and grey wires from the IDEC power supply +V and -V terminals to the M504 Comm. Module terminal 20 and 19 respectively.

Fig 4. Connect 24VDC control power



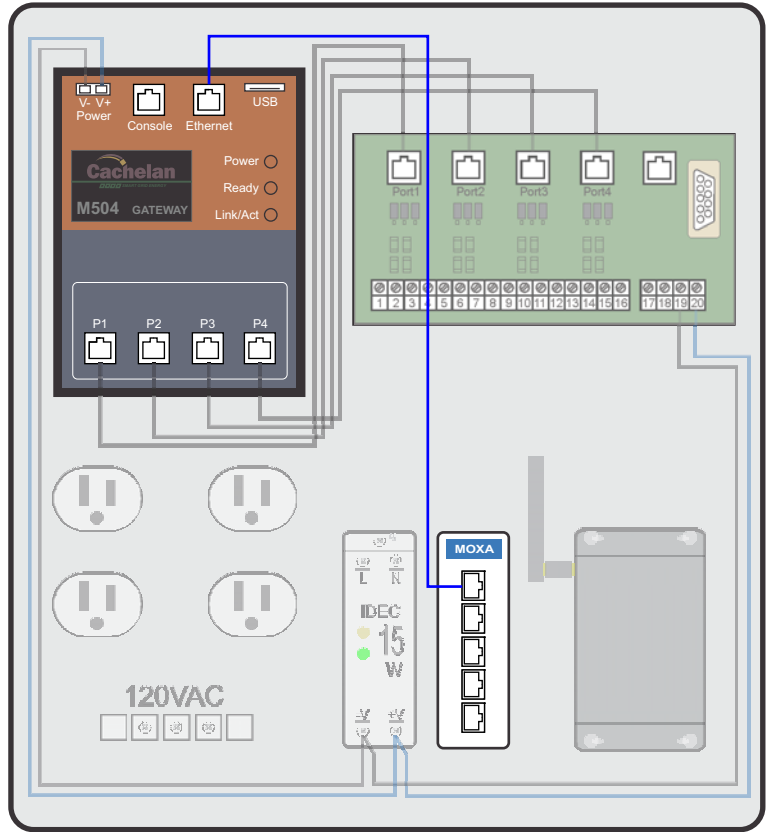
- As shown in figure 5, connect all 4 white 1ft Ethernet cables from M504 Gateway P1 - P4 to the M504 Comm. Module Port 1 - Port 4 respectively.

Fig 5. Connect RS485 cables



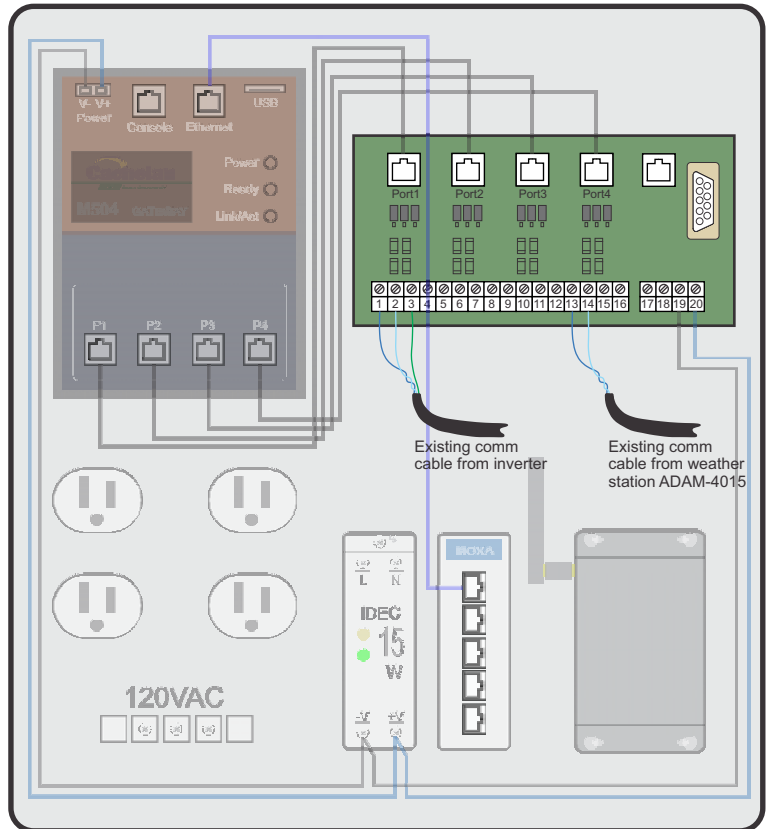
- As shown in figure 6, connect the blue 3ft Ethernet cable from M504 Gateway Ethernet RJ45 port to the any of the RJ45 ports at the MOXA Ethernet switch.

Fig 6. Connect M504 gateway Ethernet cable



- As shown in figure 7, for most of the cases, the existing inverter communication is done via RS485. This can be checked by verifying the existing communication wire to the original SEEDS gateway. At this step, there should be disconnected RS485 communication wires left in the enclosure. If this is the case, connect the RS485 wires D+ and D- to M504 Comm Module terminal 1 and 2 respectively (Once again, due to the SEEDS datalogger's generation, it might be 3-wire RS485 wiring. If this is the case, connect the 3rd Com wire to terminal 3 at the M504 Comm Module.) No work needs to be done if the communication between M504 gateway and the inverter is via Modbus TCP/IP

Fig 7. Connect RS485 cables



As shown in figure 7, find the existing RS485 Comm. cable from the ADAM 4015 weather station inside the enclosure, should be a twisted pair of blue and blue-white of a Ethernet cable. Simply connect the blue wire to terminal 13 and blue-white to terminal 14 at the M504 Comm. Module.

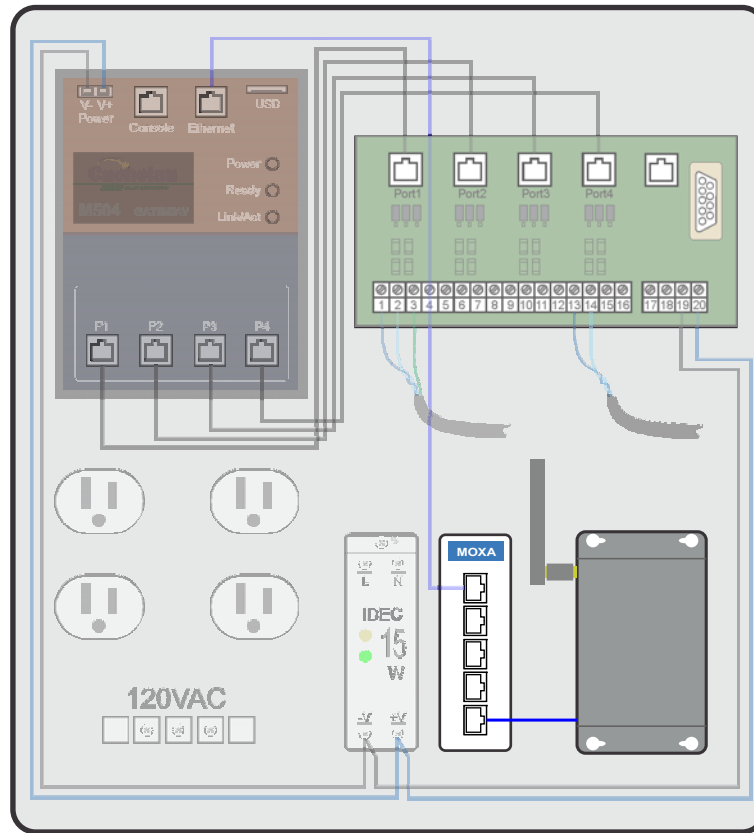
8. SEEDS uses Raven-X or Raven-EX 3G cellular modem with SunEdison owned SIM card for internet access. The modem needs to be reset back to the manufacture setting and then reconfigured to customer provided SIM card in order to reuse this modem.
  - 8.1 Make sure that the modem is powered up. Use a pin to push in the Reset button on the 3G cellular modem for more than 10 seconds then release.
  - 8.2 Connect the laptop to the modem directly via the RJ45 jack. Make sure the laptop is in auto IP address mode. Open the browser (for Raven-X it only works with IE browser) and enter the following: `http://192.168.13.31:9191` and press enter.
  - 8.3 Use the following username and password to login.
 

```
username: user
password: 12345
```
  - 8.4 Once logged in, click on the WAN/Cellular tab appears at the top of screen. At the *Set APN* field, Enter the APN for the new SIM card. If the APN is unknown, contact the SIM card supplier for assistance.
  - 8.5 At the top of the screen, click on *LAN* tab.
  - 8.6 At the left hand side, click on *Ethernet*
  - 8.7 For each of the field shown below, enter the corresponding settings:
 

```
Device IP: 192.168.0.1
Starting IP: 192.168.0.100
Ending IP 192.168.0.150
```

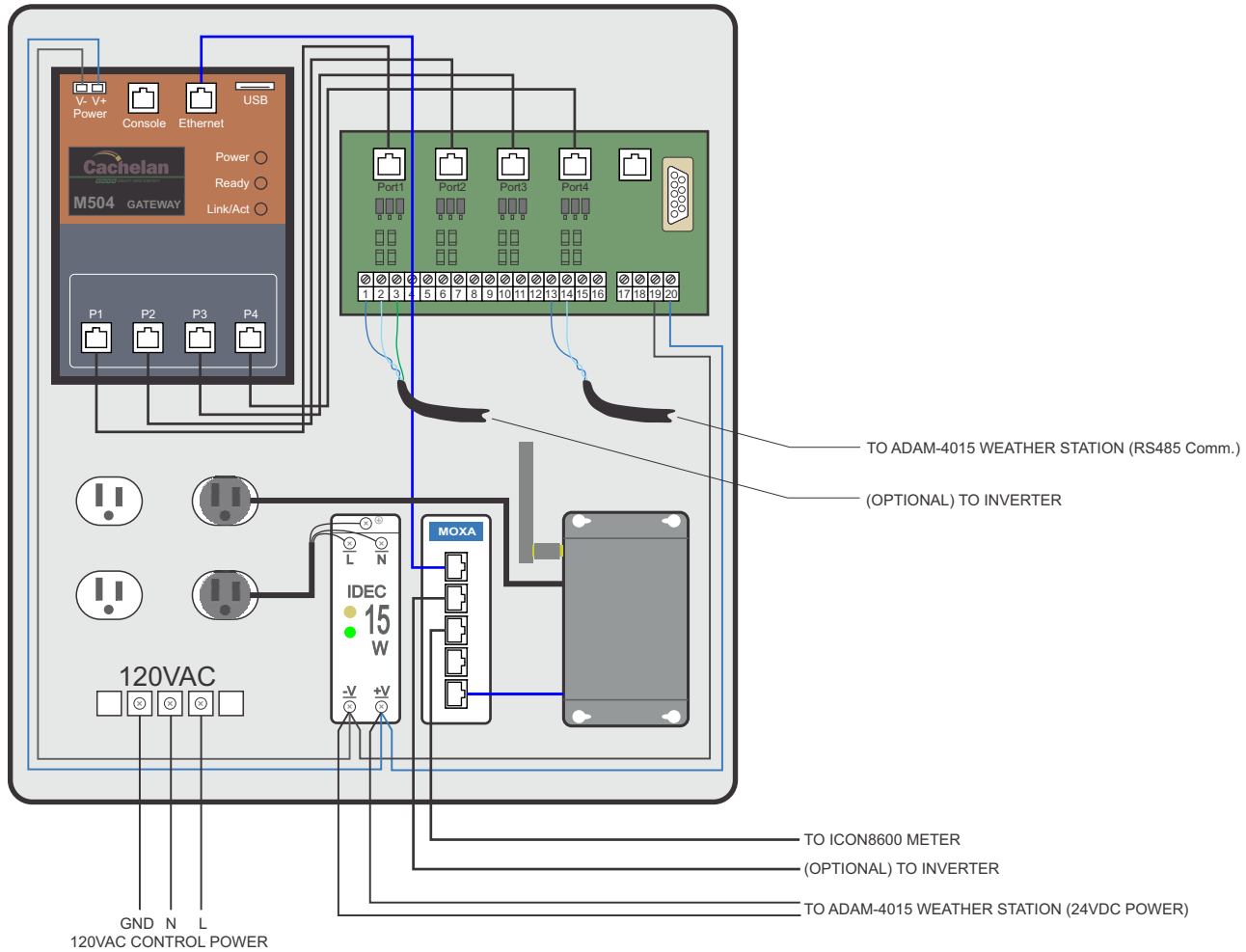
And leave the rest as its default value. Click Apply.
  - 8.8 Power cycle the modem to let new settings take effect.
  - 8.9 Now open any web page to verify the modem is connected to the internet. If not, double check the APN setting.
  - 8.10 Disconnect the cable from the installer's computer, and connect the original Ethernet cable from the modem to the MOXA Ethernet switch.

Fig 8. Connect 3G Modem Ethernet Cable



9. At this point, the enclosure should have everything connected and the wiring should look like what is shown in figure 9.

Fig 9. Complete SolarVu system wiring



10. Verifying Meter Communication Setting

- 10.1 From the meter display, press and hold the ENT button for more than 2 seconds, the display will change to the menu session.
- 10.2 Press the down key to navigate to NETWORK SETUP, press ENT, then navigate to IP ADDRESS press ENT again.
- 10.3 Verify the IP address is set to 192.168.0.11, if not, change the IP. If password is required, the default password is 0
- 10.4 Navigate to MASK and press ENT
- 10.5 Verify the Mask is set to 255.255.255.0. If not, change the MASK.
- 10.6 Navigate to GATEWAY and press ENT
- 10.7 Verify the Gateway is set to 192.168.0.1. If not, change the Gateway.
- 10.8 Now the communication configuration is done. Exit the menu by press and hold the ENT key for more than 2 seconds.

11. Almost complete. Power up the SolarVu enclosure and let it run. Call Cachelan tech support line to confirm if all setup, configuration and wiring are correct before leaving the site.

**Cachelan Technical Support**  
**contactus@cachelan.com**  
**905.470.8400 x224**