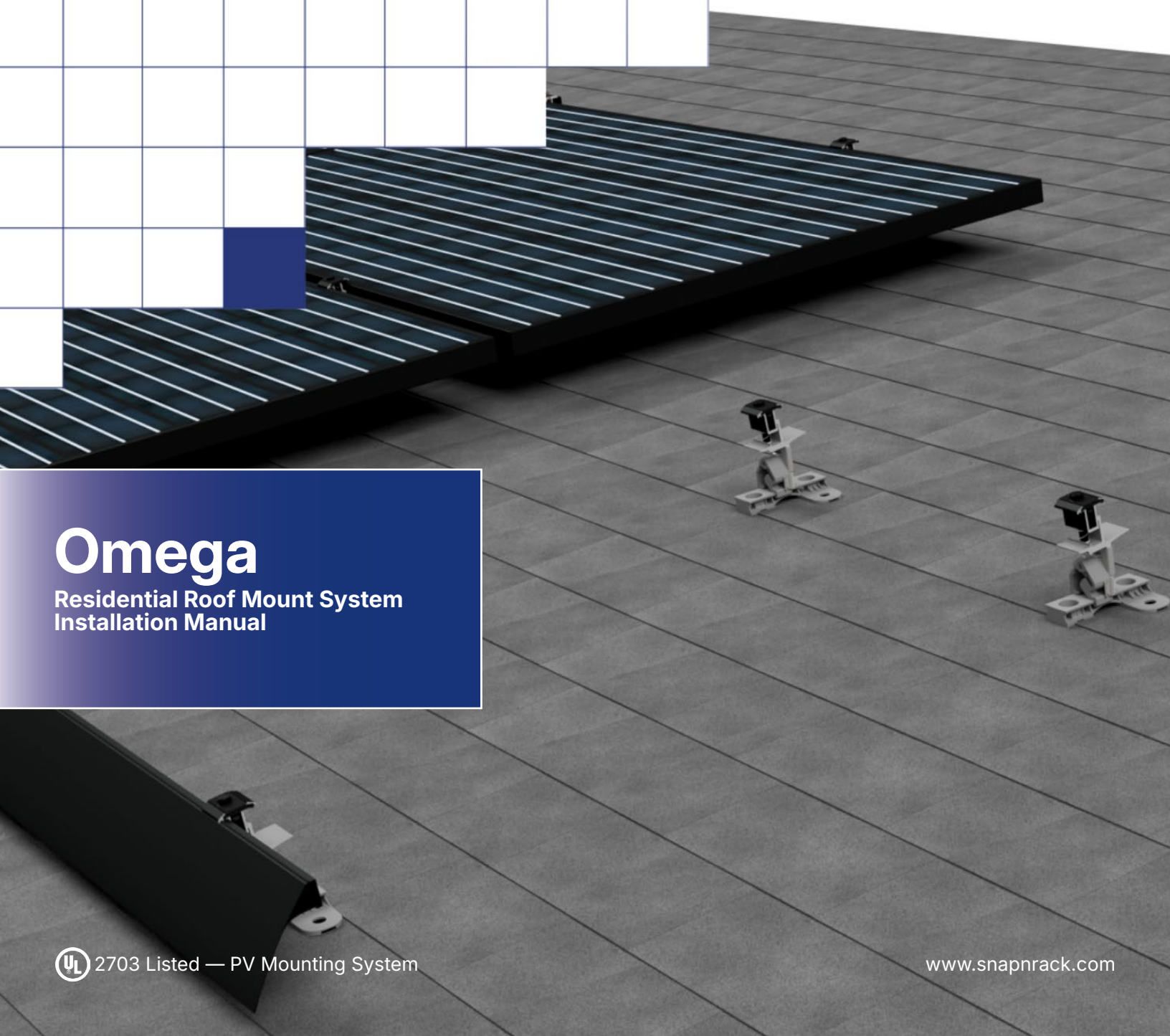
SnapNrack®

By Installers. For Installers.

Omega

Residential Roof Mount System Installation Manual



2703 Listed — PV Mounting System

www.snapnrack.com

An Intro to SnapNrack Omega

The SnapNrack Omega System is an advanced railless solar mounting platform engineered to maximize flexibility, speed, and structural integrity on residential rooftops. Built on a simplified architecture of multi-functional components, Omega drastically cuts parts handling and inventory overhead while delivering unmatched install versatility. Designed around real-world crew workflows, Omega adapts directly to the job at hand—fully supporting both Module-First Mounting (MFM) and Roof-First Mounting (RFM) methodologies.

When installed in accordance with this manual, SnapNrack Omega systems provide robust structural attachment across composition shingle and approved low-slope substrates, fully complying with applicable codes including the International Building Code (IBC) and UL 2703 requirements for bonding and grounding. Thoroughly evaluated for static water submersion (ASTM E2140) and wind-driven rain (UL 2582) without requiring topical roofing sealant, Omega delivers an engineered, water-tight foundation solar professionals can trust.

Benefits of Installing the Omega System

One Platform: Module-First or Roof-First Workflows

Choose how you install without changing your racking system. Omega allows crews to prep mounts on the ground in a Module-First Mounting (MFM) workflow or set mounts directly on the roof layout using a Roof-First Mounting (RFM) process, giving your team complete operational freedom on every array.

Universal Base with Flexible Fastening Options

Eliminate the need to carry separate rafter and deck-mount hardware. The single Omega base adapts to structural framing or direct-to-deck attachments using (1) 5/16” lag screw, (2) DeckAnchors, or #14 wood screws (2 into rafter, 4 into deck), allowing crews to easily navigate tricky layouts and avoid missed rafters without stopping work.

Integrated SpeedSeal+™ Sealing Technology

Save critical time on the roof while ensuring lasting waterproofing. Each Omega Mount features integrated SpeedSeal+™ butyl pads that compress directly onto the shingle course during fastener drive-in, eliminating messy secondary tube sealant applications, extra roof steps, and cold-weather cure delays.

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Certification Details

SnapNrack Omega has been evaluated by Underwriters Laboratories (UL) and Listed to UL Standard 2703 for Grounding/Bonding and Fire Classification.

Grounding/Bonding

Only specific components have been evaluated for bonding, and are identified as being in the ground path. The Omega components that have been evaluated for bonding are the Omega Mount Assembly, Omega Link Assembly, Omega Clamp Assembly, SkirtRail, Ground Lugs, and Smart Clips.

The following system components are not required to be bonded to the system based on the exceptions in clause 9.1 of UL 2703 1st Ed.: SkirtRail Spacer and Positioning Springs. Wire management clips are utilized to route conductors away from these components and must be assembled according to the instructions.

This mounting system may be used to ground and/or mount a PV module complying with UL 1703 only when the specific module has been evaluated for grounding and/or mounting in compliance with the included instructions. See Appendix A for the list of modules tested with the Omega system for integrated grounding.

Ground Lugs have been evaluated to both UL 467 and UL 2703 Listing requirements. The following ground lugs have been approved for use: SnapNrack model WM-GROUNDLUG (formerly 242-92202) and Ilsco models GBL-4DBT and SGB-4.

The following components have been evaluated for bonding as the fault current ground path: Omega Mount Assembly (Mount Clamp Top, Leveler, Riser), Omega Link Assembly, Omega Clamp Assembly, Wire Management Clips, and Ground Lugs. In order to maintain the Listing for bonding, wire management clips must be assembled to route conductors away from parts that have not been evaluated for bonding.

A Listed (QIMS) and Unlisted Component (KDER3) grounding lug, SnapNrack part no. WM-GROUNDLUG (formerly 242-92202), is attached to the module frame flange for the normal attachment of a Grounding Electrode Conductor, which provides bonding within the system and eventual connection to a Grounding Electrode, as required by the U.S. NEC. Details of part no. WM-GROUNDLUG (formerly 242-92202) can be found in Volume 1, Section 4, and Volume 2, Section 2. When this method is used, the grounding symbol is stamped onto the body of the ground lug to identify the grounding terminal.

An alternate method of grounding, a UL Listed (KDER and QIMS) grounding lug, Ilsco (E34440 and E354420) model SGB-4 is attached to the module frame flange. When this method is used, the grounding terminal is identified by the green colored screws of the lug.

An alternate method of grounding, a UL Listed (KDER and QIMS) grounding lug, Ilsco (E34440 and E354420) model GBL-4BDT is attached to the module frame flange through the specified hardware and torque values. When this method is used, the grounding terminal is identified by the green colored set screw of the lug.

An alternate method of grounding, Enphase R/C (QIKH2)(QIMS2) model M250, M215 & C250 is bonded to the Listed PV module frame by the Enphase R/C (QIMS2) Model EFM-XXMM anodization piercing mounting/clamping kit. The total roof-mounted PV system is bonded (modules and microinverters) together and the assembly is bonded to ground through the Enphase R/C (QIMS2) Engage Cables; Model ETXX-240, ETXX-208 or ETXX-277, when properly grounded at the service entrance.

R/C (QIMS2), Dynoraxx (E357716) photovoltaic bonding device cat. no. Dynobond is an optional component that may be used with this system. The Dynobond device has been evaluated to provide module to module bonding. The Dynobond device attaches to the frame flange of adjacent modules Listed (QIMS). SnapNrack MLPE Frame Attachment Kit model WM-MLPE (formerly 242-02151) has been investigated to bond approved MLPE device back plates to frames of modules.

See Appendix A for all tested MLPE devices.

When installing the MLPEs per the specifications in the MLPE Installation section of this manual, the system is bonded to the optimizer backing plate.

Fire

SnapNrack Omega has been investigated for a Class A System Fire Classification for Steep-Sloped and low sloped roofs with Type 1, Type 2, Type 29, and Type 38 modules. Because the system was tested at 5 inches above the test roof fixture, Omega can be installed without any height restrictions due to System Fire Classification. See Appendix A for potential modulespecific height restrictions due to module temperature. The SkirtRail is considered an optional component with respect to Fire Classification for Type 1, Type 2 and Type 29 modules, as SnapNrack Omega maintains the same Fire Classification Rating both with and without the SkirtRail.

Type 38 modules require the SkirtRail to comply with fire rating requirements for the racking system.

SnapNrack recommends a periodic re-inspection of the completed installation for loose components, loose fasteners, and any corrosion, such that if found, the affected components are to be immediately replaced.

Water Submersion Test

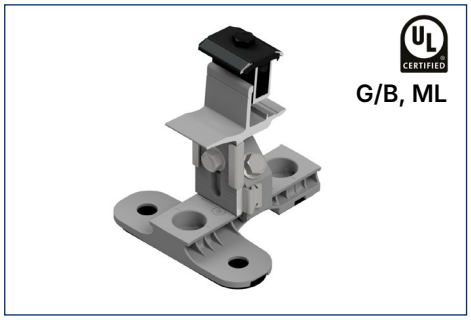
SnapNrack Omega has been evaluated for water penetration of composition shingle roofing systems by static water pressure head. Test method and apparatus were based on a version of ASTM Designation: E2140

Wind-Driven Rain Test

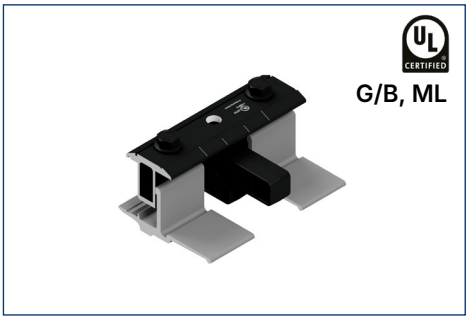
SnapNrack Omega has been evaluated for the Wind-Driven Rain Test per UL Subject 2582. Testing was conducted without roofing sealant.

Component Details

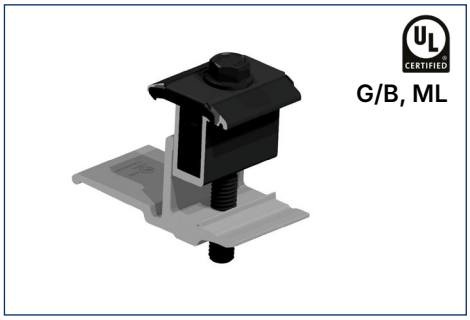
Structural Components



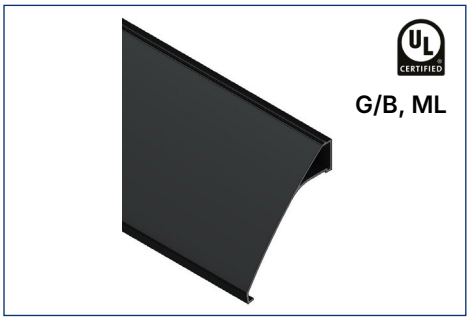
Omega Mount
Omega Mount assembly including SpeedSeal+™ Base, Riser, Leveler, Clamp Top, and hardware



Omega Link
Omega Link assembly including Link Bottoms, Link Top, column spacer, and hardware



Omega Clamp
Omega Clamp assembly including Link Bottom, Clamp Top, and hardware



Universal SkirtRail
Universal SkirtRail available in two lengths



SkirtRail Spacers
Universal SkirtRail Spacer for 40mm, 38mm, 35mm, 32mm, and 30mm modules



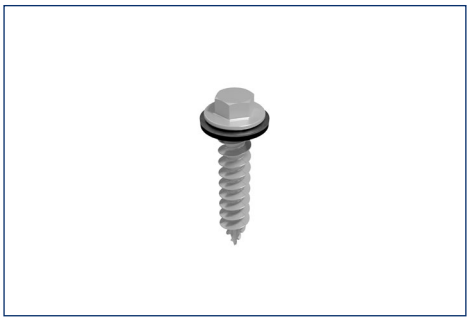
SkirtRail End Cap
Plastic end cap for SkirtRail (can also be used as splice)



5/16" Lag Screw with Sealing Washer
5/16" Lag with Sealing Washer assembly including standard 5/16" lag screw and sealing washer



#14 Sealing Wood Screw
#14 Sealing Wood Screw for deck mounting, features 1/2" Hex Head for single tool installations. Includes Stainless Steel Sealing Washer



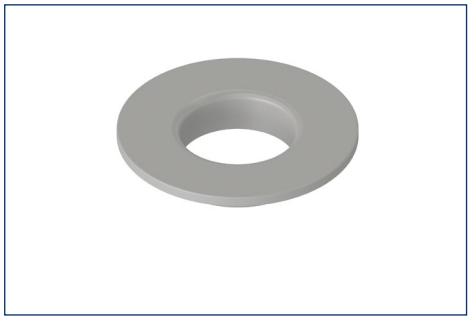
DeckAnchor 2.5
DeckAnchor™ optimized for deck mounting, provides enhanced withdrawal and pullover resistance compared to standard wood screws. Includes Stainless Steel Sealing Washer

UL Listing Legend:
ML = Evaluated for Mechanical Loading
G/B = Evaluated for Grounding/ Bonding

Component Details

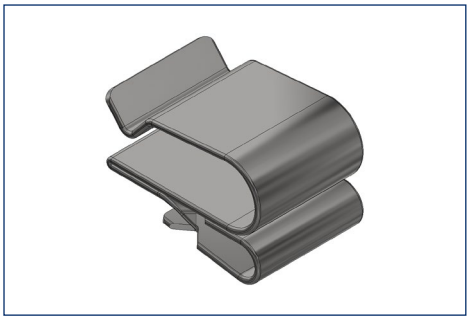
Structural Components

UL Listing Legend:
ML = Evaluated for Mechanical Loading
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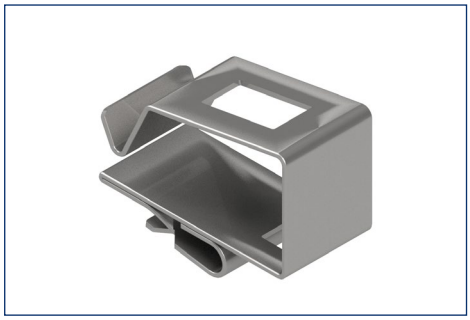


WoodScrew Adapter
Shoulder Washer allowing deck mounting with four #14 sealing wood screws.

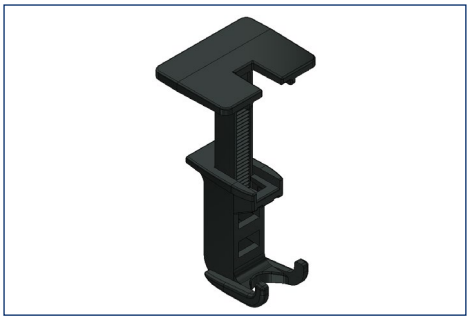
Wire Management Components



SmartClip
Module frame cable clip, holds two PV wires or Enphase IQ-Cables

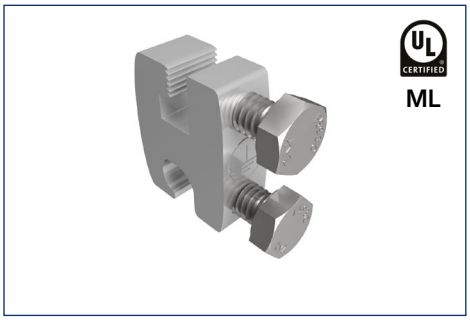


SmartClip XL
Module frame cable clip, holds six PV wires or four Enphase IQ-Cable

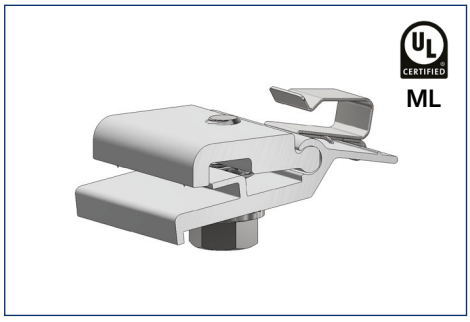


Wire Saver
Designed to secure conductors that become loose and hang below the array, holds one conductor

Grounding/MLPE Components



SnapNrack Ground Lug
SnapNrack Ground Lug assembly used for attaching the Equipment Grounding Conductor (EGC) onto one module or any Omega Mount per array.



MLPE Frame Attachment Kit
Attaches MLPEs (Module Level Performance Enhancers) and other related equipment to the module frame

Component Details

Hardware Torque Specifications

The recommended torque to be applied to components for proper assembly and bonding are as follows:

Hardware Description	Torque Specification
All Omega bolts with 1/2" hex head: System Leveling Bolt, Mount Clamping Bolt, Riser Bolt	16 ft-lb [21.7 N.m]
Ground Lug model WM-GROUNDLUG (formerly 242-92202) to Module Frame or anywhere on the Omega Mount (excluding the Base), and Ground Lug model WM-GROUNDLUG to Grounding Electrode Conductor (6-10 Sol.)	8 ft-lb [10.8 N.m]
MLPE Frame Attachment Kit, MLPE Rail Attachment Kit	10 ft-lb [13.6 N.m]
SolarEdge Frame Mounted Microinverter Bracket to Module Frame	11 ft-lb [14.9 N.m]
Enphase Frame Mounted Microinverter Bracket to Module Frame	13 ft-lb [17.6 N.m]
Ground Lug model SGB-4 to module	75 in-lb [8.5 N.m]
Ground Lug model SGB-4 to Grounding Electrode Conductor (4-14 Sol. or Str.)	35 in-lb [4.0 N.m]
Ground Lug model GBL-4DBT to module	35 in-lb [4.0 N.m]
Ground Lug model GBL-4DBT to Grounding Electrode Conductor (10-14 Sol. or Str.)	20 in-lb [4.0 N.m]
Ground Lug model GBL-4DBT to Grounding Electrode Conductor (8 Sol. or Str.)	25 in-lb [4.0 N.m]
Ground Lug model GBL-4DBT to Grounding Electrode Conductor (4-6 Sol. or Str.)	35 in-lb [4.0 N.m]

Pre-Installation Requirements and Precautions

Site Survey

- Measure the roof surfaces and develop an accurate drawing, including any obstacles such as chimneys and roof vents
- If plans for the roof structure are available, verify that the plans match the final structure
- Identify any roof access or setback areas as required by the local AHJ
- Identify any construction issues that may complicate the process of locating rafters from the roof surface
- If you find structural problems such as termite damage or cracked rafters that may compromise the structure's integrity consult a structural engineer

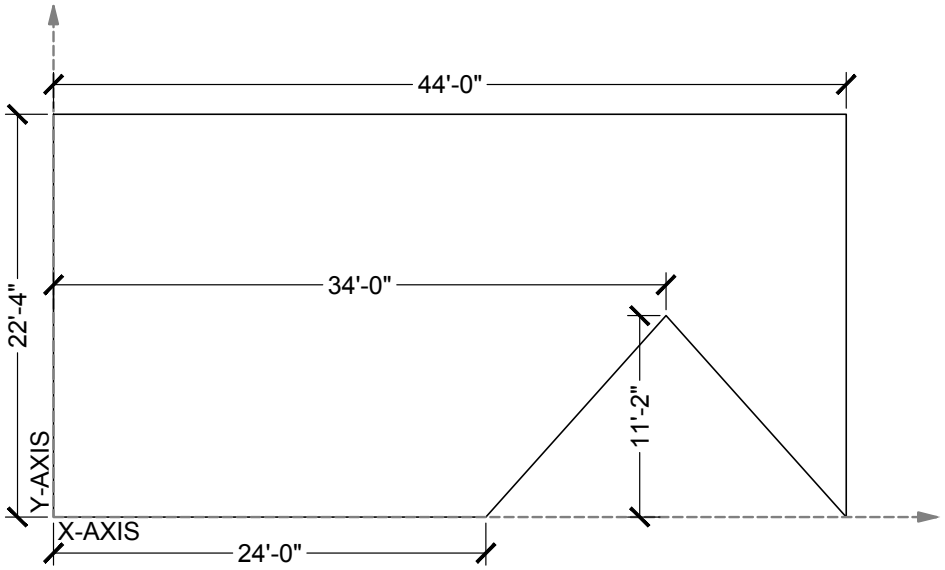


Image note: X-Axis described in this manual is cross-slope on the roof, Y-Axis is in ilne with the roof slope.

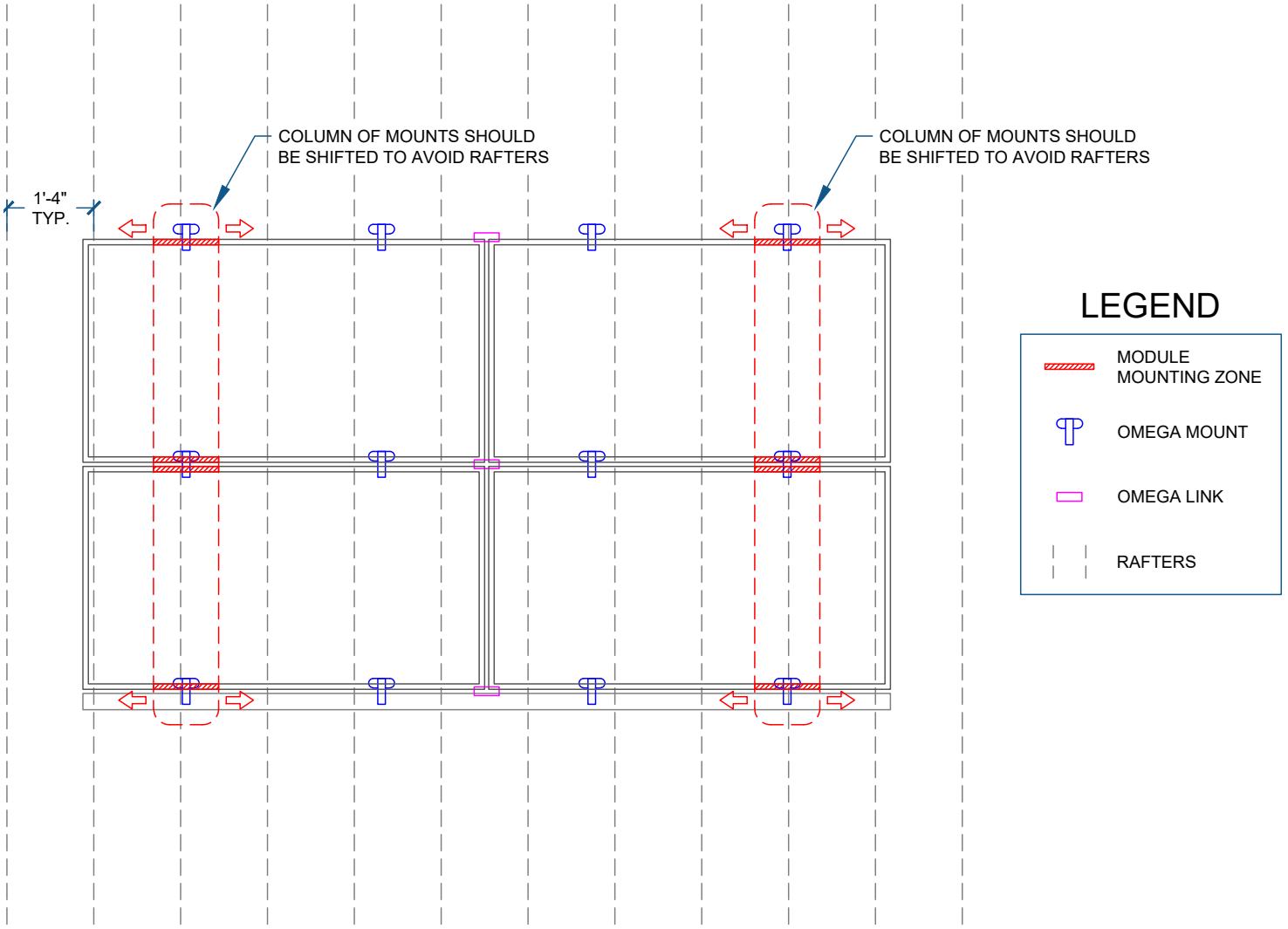
Site Survey

- Omega can be installed with both "module-first" (MFM) and "roof-first" (RFM) mounting methods
  - MFM is unique in that mounts are attached to the module frame prior to being installed on the roof, and requires a minimum of two mounts per module column (no range of attachment spacing)
  - RFM is a more standard install method where mounts are attached to the roof structure, either directly to the decking or into structural members (rafters), and is driven by the allowable mount spacing based on design conditions for the project/installation (i.e. wind speed, snow load, building height, roof pitch, etc.)
- PV Designers should account for the 0.75 inch spacing between rows and columns of modules when creating the layout
- Determine site conditions for calculating the engineering values, confirm site conditions and code versions comply with local AHJ requirements
- Reference site conditions and system specifications in Omega Structural Engineering Report to determine either the number of attachments per module side or what the allowable attachment spacing is, depending on mounting method
  - If three mounts are required per module side for MFM, it is recommended that the RFM installation method is used for a lower overall BOM cost
- Insert SnapNrack installation details into design plan set specific to the project requirements
- Identify homerun and Junction Box locations based on rooftop wiring requirements
- Mark distance from array edge to identifiable roof feature in x and y axes
- EXAMPLE LAYOUTS CAN BE FOUND IN APPENDIX B

Module-First Mounting (MFM) Installation

System Layout

- The module-first mounting method (MFM) is unique in that mounts are attached to the module frame prior to being installed on the roof.
- There are no spans or attachment spacing associated with MFM, two or three mounts required per module column instead (as seen below).
- DeckAnchors are the sole fastener used when installing MFM.



Mount to Module Frame Installation

Required Tools

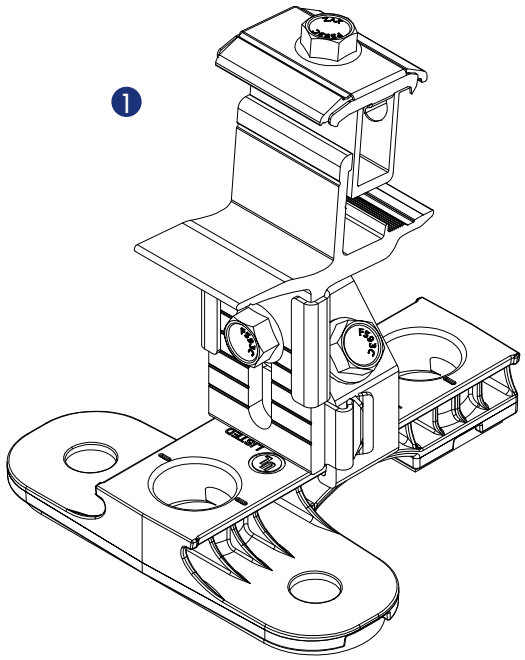
- Socket Wrench/Impact Driver
- Torque Wrench
- 1/2" Socket

Materials

1. (1) SnapNrack Omega Mount

Best Practice

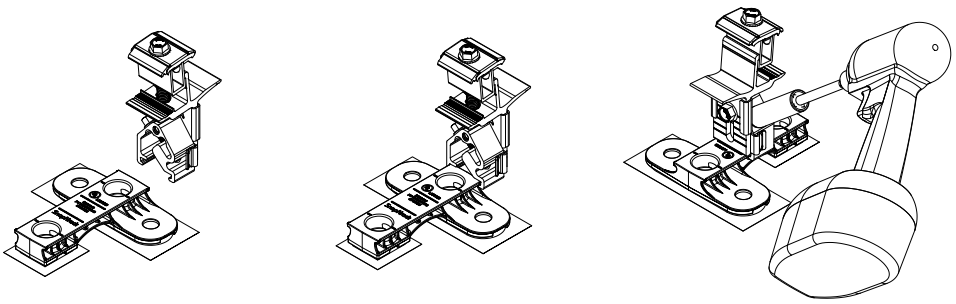
Attach all Omega mounts as the modules are being prepped with MLPEs on the ground. Attach Mounts before attaching MLPEs to simplify wire management.



Mount to Module Frame Installation

Installation Instructions

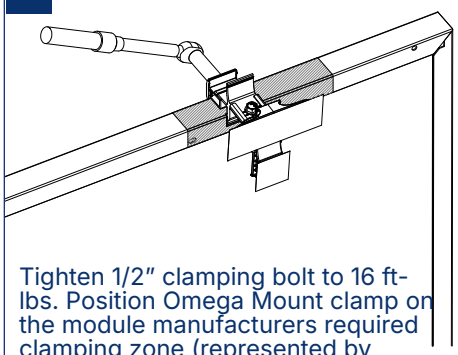
1



Install Omega top clamp sub-assembly onto base by sliding it onto the upper flanges of the base, then snugging up N-S adjustment bolt slightly. Ensure leveling bolt is tightened to 16 ft-lbs.

Install Note:
Ensure top clamp sub-assembly is oriented the correct way in relation to the base, the longer module landing pad and "wings" of the base should be on the same (upslope) side.

3



Tighten 1/2" clamping bolt to 16 ft-lbs. Position Omega Mount clamp on the module manufacturers required clamping zone (represented by shaded region in the image below). Shift the mount(s) to the left or right within that zone depending on where the rafter is located, as outlined in the System Layout section above. (DeckAnchors cannot go into rafters) A minimum of two mounts are required per module on one side.

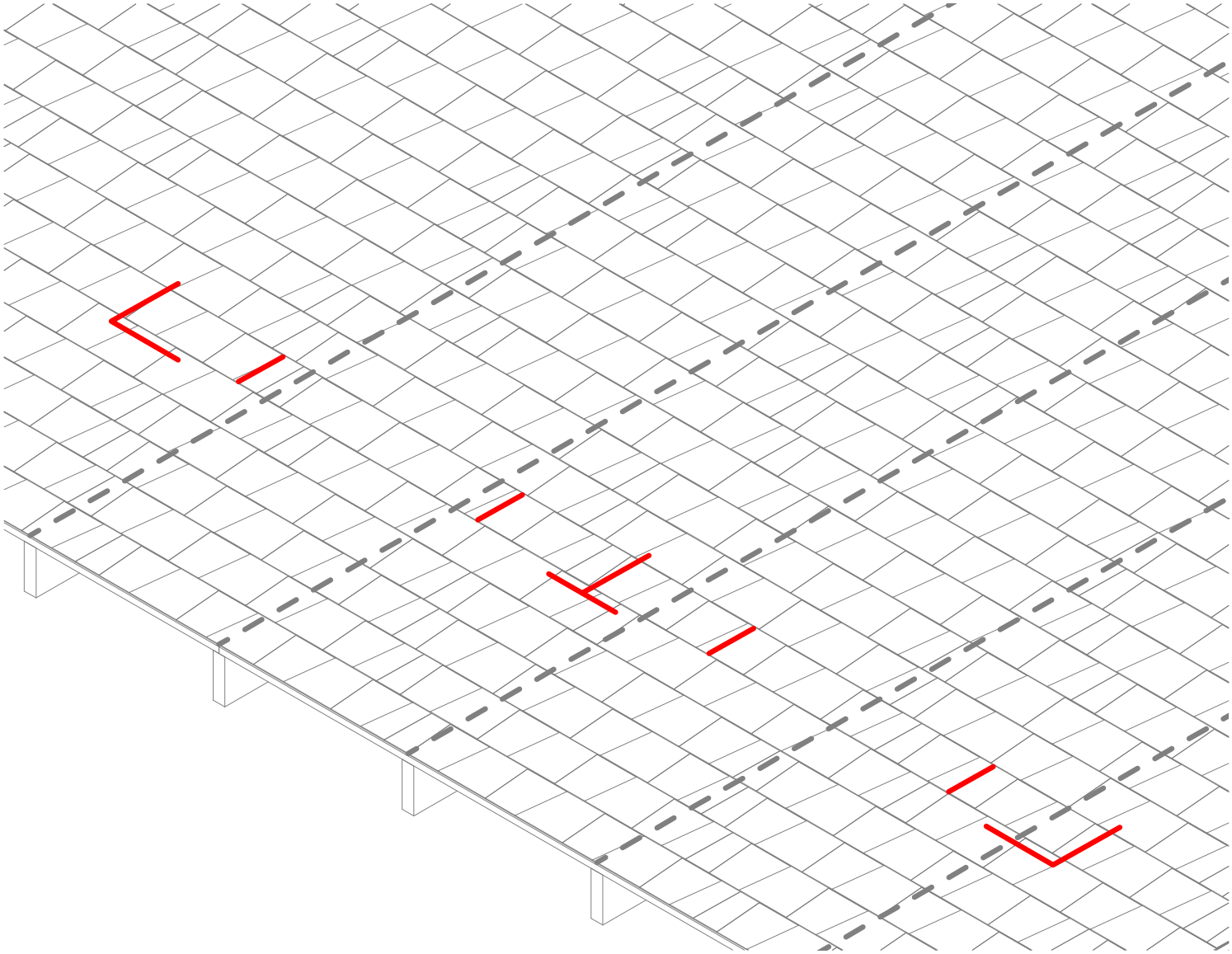
Omega SkirtRail Layout

Required Tools

- Chalk
- Tape Measure
- Socket Wrench/Impact Driver
- Torque Wrench
- 1/2" Socket
- 3" Minimum Socket Extension (Optional)

Layout Instructions

- Use a tape measure to verify that all modules will fit properly on the roof surface.
- Mark rafter locations per the System Layout section above.
- On the roof, draw the layout for the SkirtRail installation including module gaps (recommended 0.75 inch gap), bottom corners, and locations of the two Omega attachments per module that clamp to the SkirtRail. Ensure rafters are avoided, as outlined in the System Layout section above.



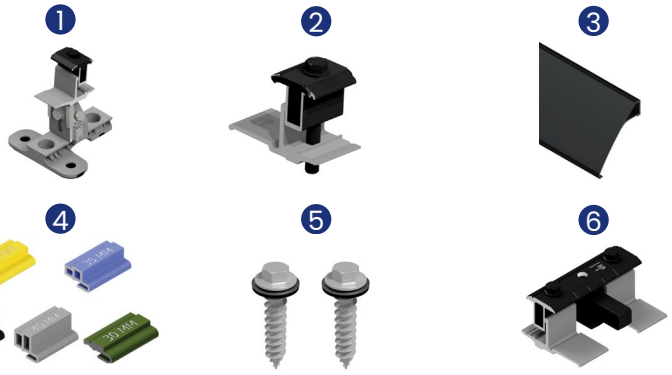
Omega Mount: SkirtRail Installation

Required Tools

- Socket Wrench/Impact Driver
- Torque Wrench
- 1/2" Socket

Materials

1. (1+) SnapNrack Omega Mount
2. (1+) Omega Clamp
3. (1+) Universal SkirtRail
4. (1+) Universal SkirtRail Spacers
5. (2+) DeckAnchors
6. (1+) Optional - Omega Link



Application Note

Compatible roofing substrates and minimum roof pitches:

- Composition shingle, 9.5°
- Low slope roofs including metal, concrete, rolled composition, EPDM, TPO, PVC, PolyPropylene, and SMS modified bitumen- ensure positive drainage with no chance of standing water.

Ensure roof construction and pitch meet minimum building code requirements.

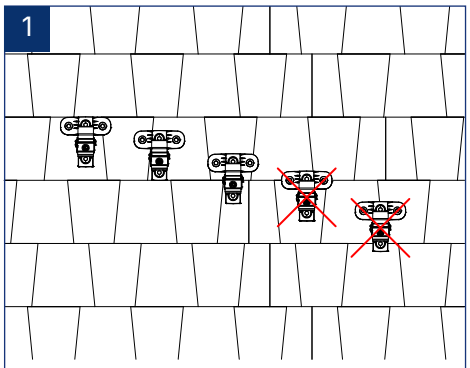
Temperature Range:

- Installation: 0°F - 150°F (-18°C - 66°C)
- Service: -40°F - 200°F (-40°C - 93°C)
- For installation temperatures below 32°F (0°C) it is recommended that the butyl is warmed to more easily conform to the roof texture.

Omega Mount: SkirtRail Installation

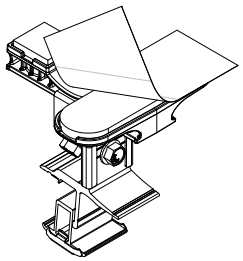
Installation Instructions

1



Install Omega Mounts at locations drawn during the SkirtRail layout. Mounts must be installed so each butyl pad is entirely on one course of composition.

2

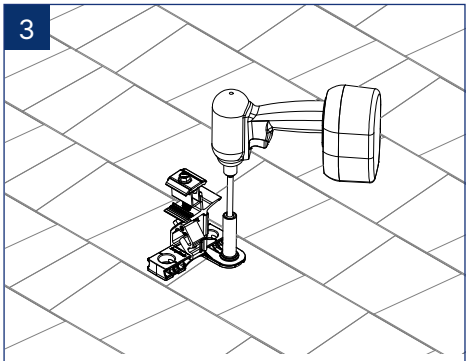


Remove the protective backing from both butyl pads on the bottom of the mount before installation to ensure a watertight seal.

Install Note:

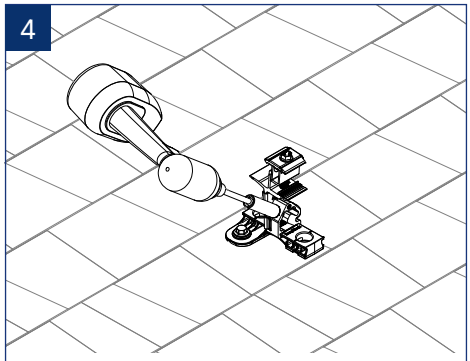
If possible, avoid installation directly over shingle joints/seams. Otherwise, fill the seam with sealant prior to installation.
IMPORTANT: Do not install over shingle steps greater than 1/8" tall.
Double check attachment positions before installing screws, butyl is extremely difficult to move once tightened.

3



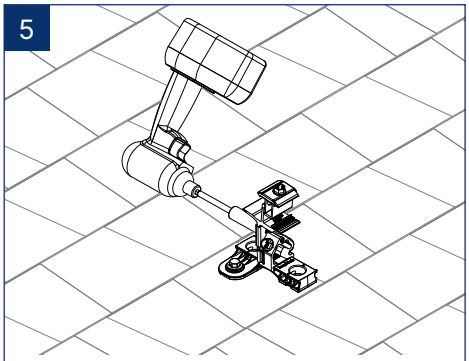
Attach Omega Mount to roof using the (2) SnapNrack DeckAnchors, tightening until the EPDM washers compress slightly, then repeat for remaining mounts in row.

4



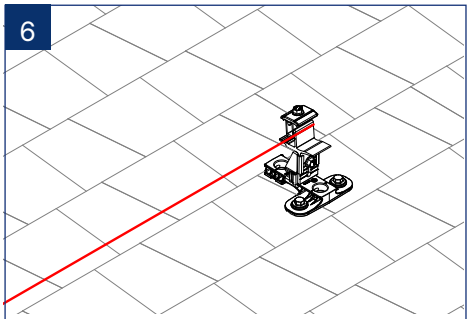
Loosen Riser bolt and adjust end Mounts up or down until aligned with bottom edge of array as marked on the roof, then tighten the Riser bolt.

5



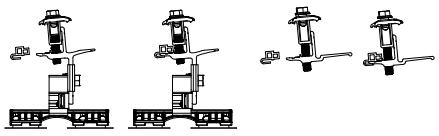
To set the Omega Mount level, loosen the Leveling bolt and move the clamp up or down, then tighten the Leveling bolt and torque to 16 ft-lbs [21.7 Nm].

6



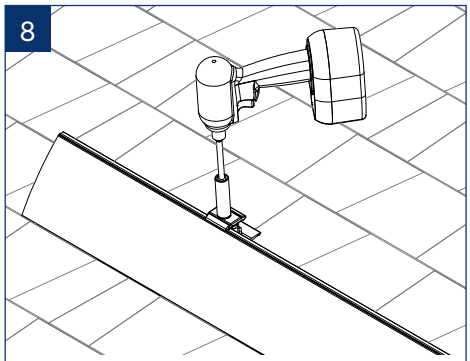
Pull string line tight from one corner mount to opposite corner mount to align and level all Omega Mounts between the end mounts.
Use the string line alignment feature on Mounts to level and align the Mounts.

7



Universal Spacers will need to be added to Mounts and Clamps where SkirtRail will be installed.

8

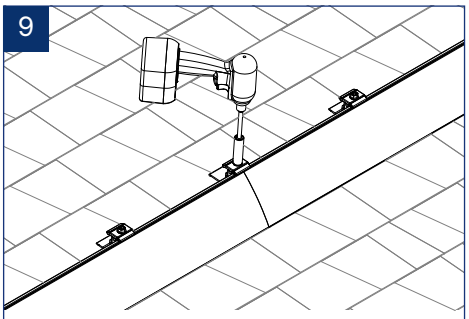


Install Universal SkirtRail by holding it in Mount(s), sliding to align with array layout marks, and clamping into mount.

Omega Mount: SkirtRail Installation

Installation Instructions

9



Use Omega Clamps to connect multiple lengths of SkirtRail.

Install Note:
Optionally, use Omega Links to connect lengths of SkirtRail. Do not over tighten when mounting the SkirtRail.

Wire Management

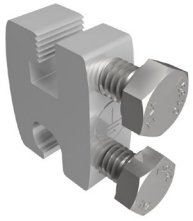
Required Tools

- Socket Wrench/Impact Driver
- Torque Wrench
- 1/2" Socket
- Electrician Tools

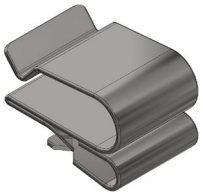
Materials

1. SnapNrack Ground Lug
2. Smart Clip [2 PV Wires, 1 Enphase IQ Cable]
3. Smart Clip XL [6 PV Wires, 4 Enphase IQ Cables]
4. Wire Saver [1 PV Wire]

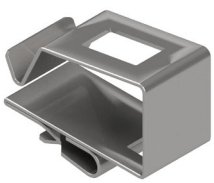
1



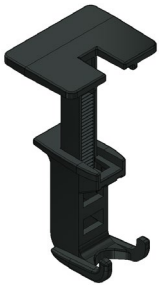
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3



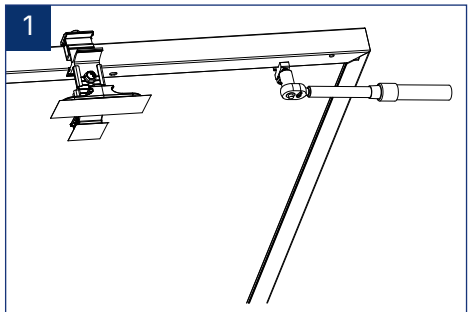
4



Wire Management

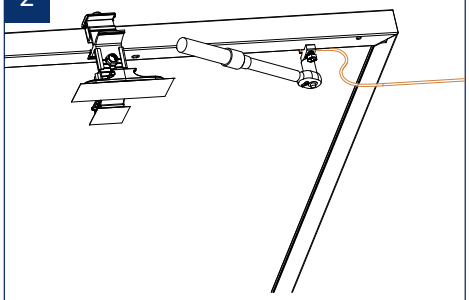
Installation Instructions - Ground Lug

1



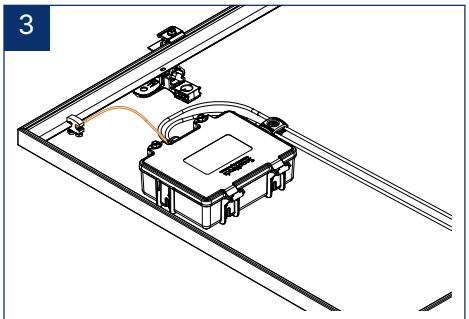
SnapNrack Ground Lug can be attached anywhere along the module frame or any Omega Mount near the Junction Box. Torque module clamping bolt to 8 ft-lbs [10.8 Nm].

2



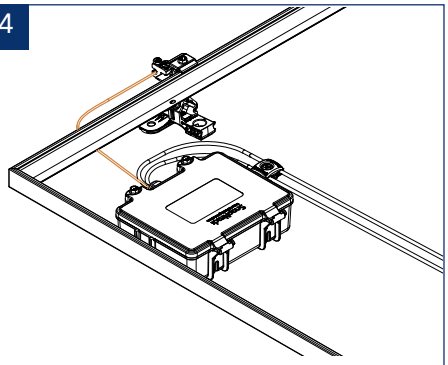
Run 10 – 6 AWG, solid, bare copper GEC into Ground Lug channel, torque wire clamping bolt to 8 ft-lbs [10.8 Nm].

3



Run bare, solid EGC from SnapNrack Ground Lug to Junction Box, bond bare EGC to stranded EGC in Junction Box. For details on installing the Junction Box, reference the Junction Box Installation Manual(s).

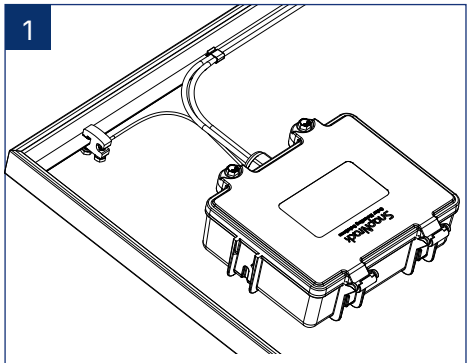
4



Optionally: Install Ground Lug on the Mount Landing Pad at the top of the array. Run bare copper between ground lug and Junction Box.

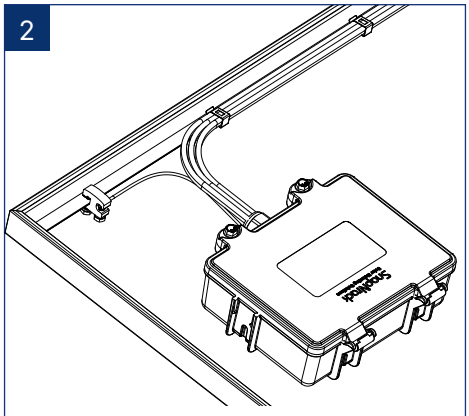
Installation Instructions - Smart Clips

1



Use SnapNrack Smart Clip II to manage up two PV wires inside the module frame while prepping out the modules on the ground or installing modules on the roof.

2



Use SnapNrack Smart Clip XL to manage larger bundles of PV wire, up to 6 PV wires per clip.

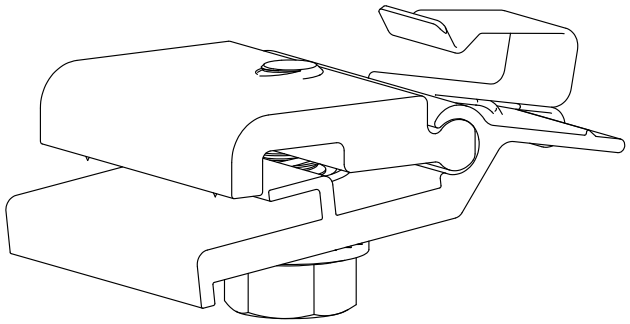
MLPE & RSD Installation

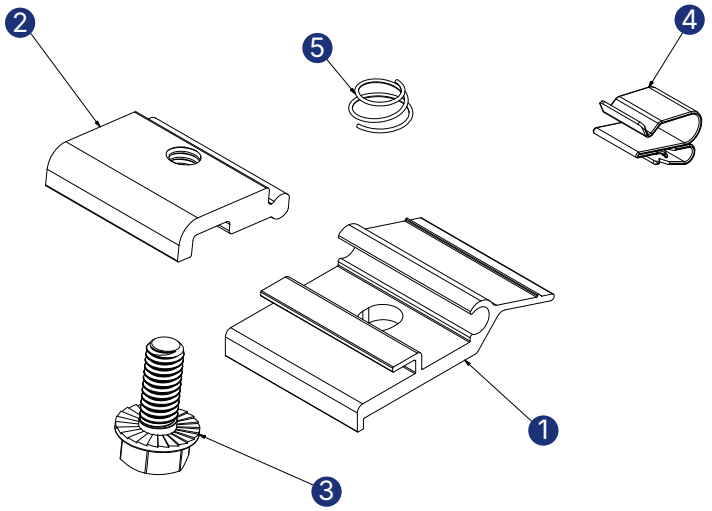
Required Tools

- Socket Wrench/Impact Driver
- Torque Wrench
- 1/2" Socket

Materials Included - MLPE Rail Attachment Kit

1. (1) SnapNrack MLPE Frame Attachment Top
2. (1) SnapNrack MLPE Frame Attachment Bottom
3. (1) 5/16"-18 × 3/4" Serrated Flange Bolt SS
4. (1) SnapNrack Smart Clip
5. (1) SnapNrack MLPE Frame Attachment Coil Spring SS

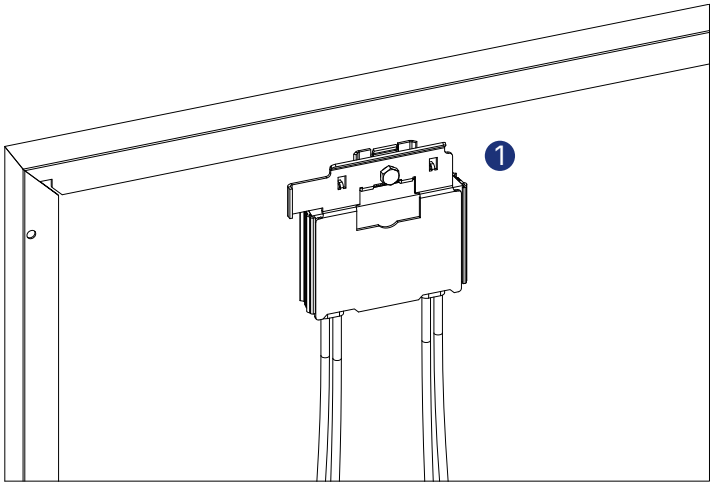




Materials Included

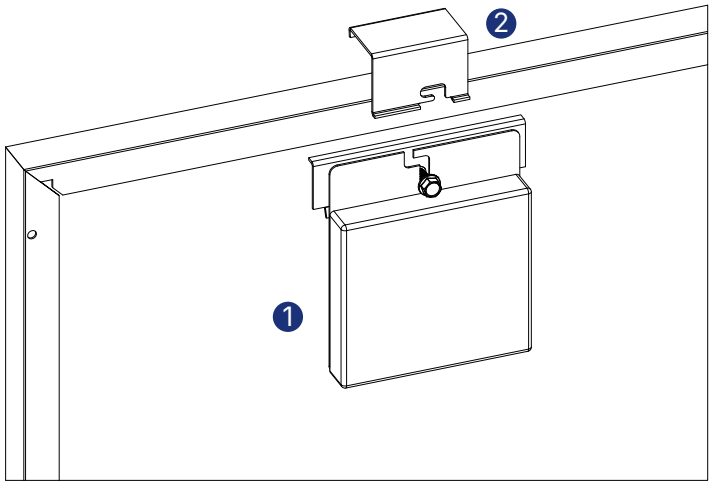
SolarEdge Frame Mount

1. (1) SolarEdge Optimizer w/ Frame-Mounted Module Add-On



Enphase Frame Mount

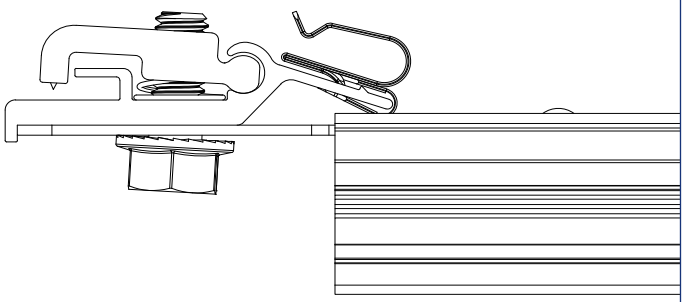
1. (1) Enphase Microinverter
2. (1) Enphase Frame Mount



Installation Instructions - SnapNrack MLPE Frame Attachment Kit

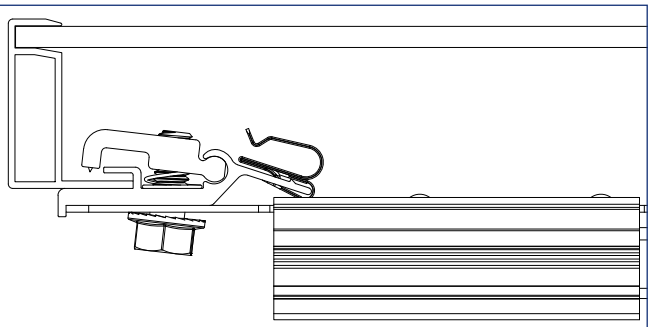
SnapNrack MLPE Frame Attachment kit are used to attach module level performance enhancing devices, and other devices such an SRD (rapid shutdown device), directly to module frames, and provide integrated grounding/bonding for Devices grounded through metal back plate. (Refer to the list of tested MLPE devices on page 29 of this manual).

1



Slide the backplate channel of the MLPE device under the MLPE Frame Attachment Kit bolt. The MLPE mounting plate should rest against the MLPE mounting plate backstop on the MLPE Frame Attachment Kit.

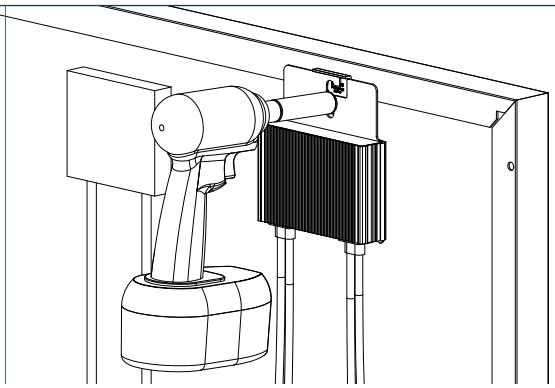
2



Position the MLPE Frame Attachment Kit on the module frame flange in a location that will not interfere with mounting system components. The module frame flange should rest against the module flange backstop on the MLPE Frame Attachment Kit.

Install Note:
Avoid blocking module frame drainage holes when installing the MLPE Frame Attachment Kit.

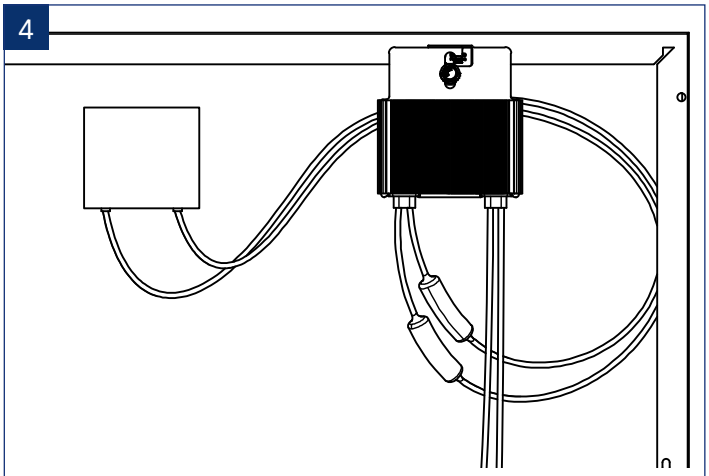
3



Tighten the mounting bolt on the MLPE Frame Attachment Kit to 12 ft-lb [16.3 N.m].

Install Note:
The MLPE Frame Attachment Kit bonds the following components: Module Frame, MLPE backplate and Smart Clip.

4

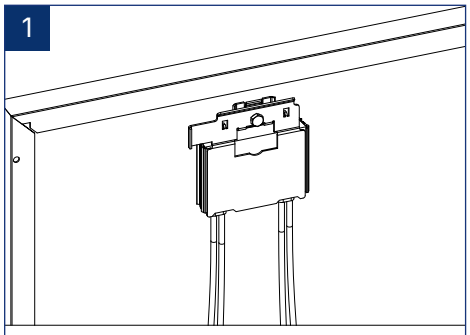


Connect the module leads to the input connectors on the MLPE device and manage conductors with the integrated Smart Clip.

MLPE & RSD Installation

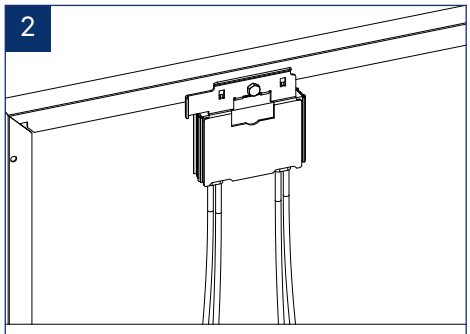
Installation Instructions - SolarEdge Frame Mount

1



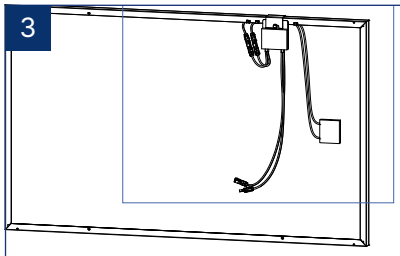
Locate the SolarEdge optimizer with Frame-Mounted Module Add-On at a location on the module frame that will not interfere with the Omega Mounts.

2



Install the optimizer mounting plate onto the module frame and tighten hardware to 11 ft-lbs [14.9 N.m].

3

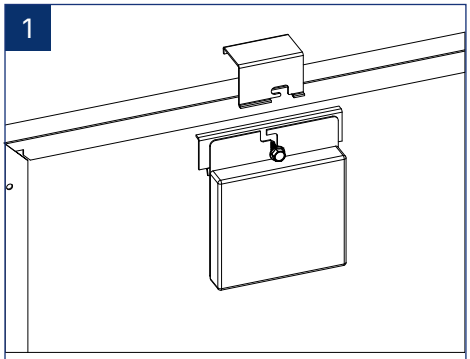


Connect the module leads to the input connectors on the optimizer and manage conductors with SnapNrack Smart Clips.

Install Note:
If module is mounted in portrait, install MLPE on long side, short side for landscape.

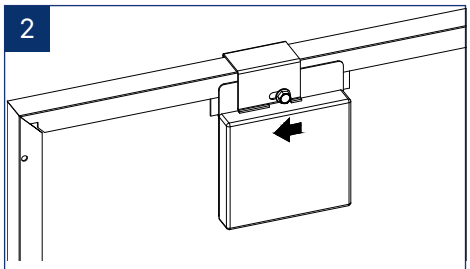
Installation Instructions - Enphase Frame Mount

1



Locate the Enphase Frame Mount bracket clamp at a location on the module frame that will not interfere with the Omega Mounts.

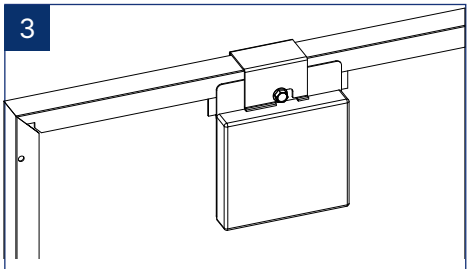
2



Slide the microinverter unit onto the bracket clamp, then move it slightly to the left.

Install Note:
The microinverter mounting flange should be on the outside of the module frame.

3



Tighten the hardware to 13 ft-lbs [17.6 N.m].
Connect module leads to microinverter DC connectors.

Install Note:
Refer to the Enphase Frame Mount installation guide for additional instructions.

Module Installation

Required Tools

- Socket Wrench/Impact Driver
- Torque Wrench
- 1/2" Socket
- 3" Minimum Socket Extension (Optional)

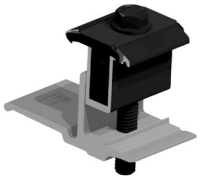
Materials Included

1. (1+) Omega Mount
2. (1+) Omega Clamp
3. (1+) Optional - Omega Link

1



2



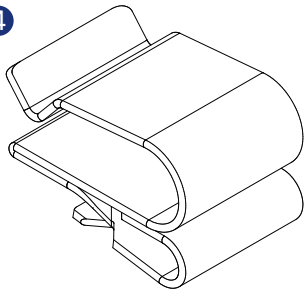
3



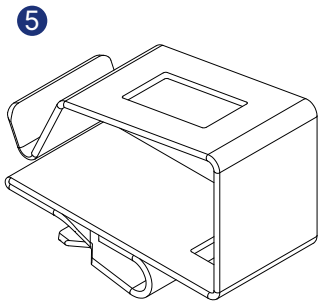
Other Materials Required

4. SnapNrack Smart Clip (2-5 per module)
   See Wire Management section for details
5. SnapNrack Smart Clip XL (10-20 per array)
   See Wire Management section for details

4



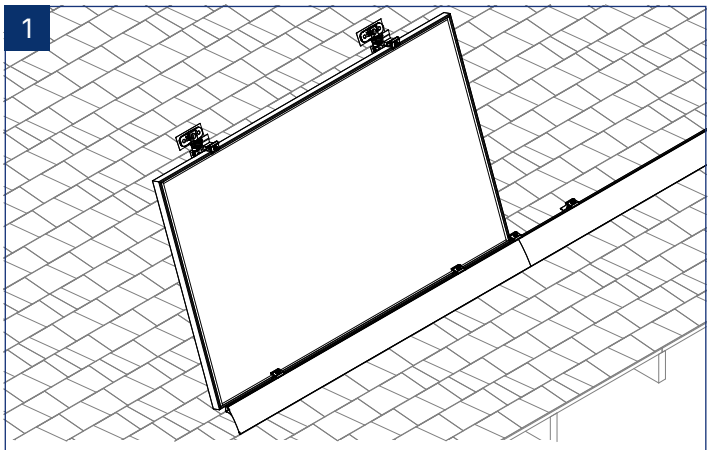
5



Module Installation

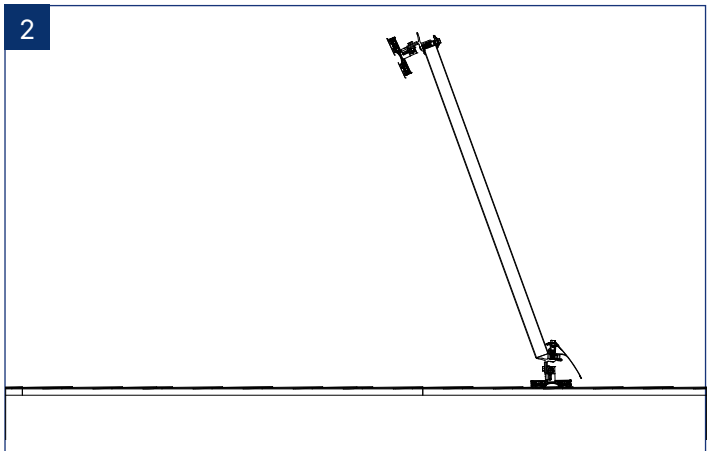
Installation Instructions - Bottom Row

1



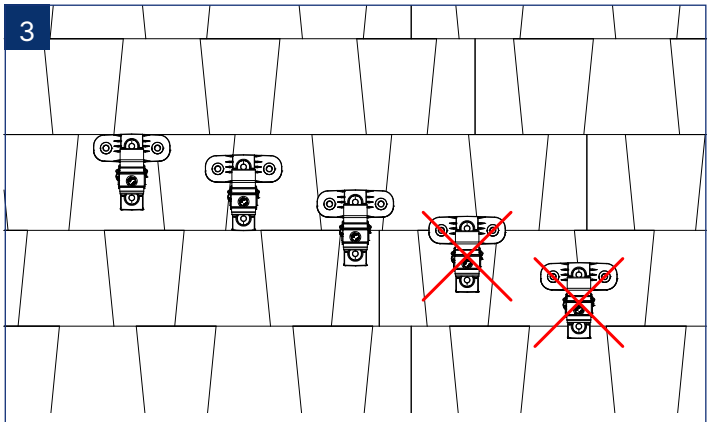
Rest downslope edge of module on the Mounts and/or Clamps, then position module so side edge is flush with marked edge of array layout or SkirtRail.

2



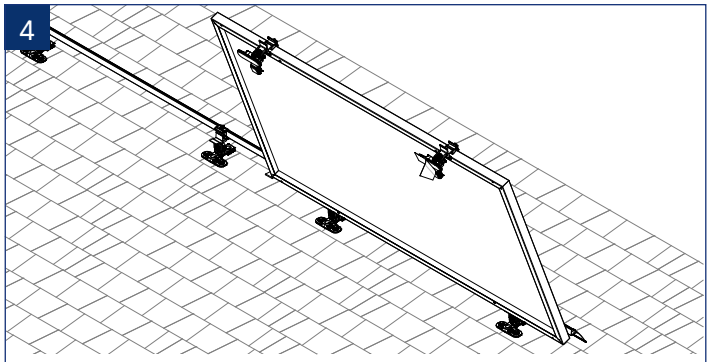
Lower upslope edge of module while simultaneously applying slight pressure to seat module into Mounts and/or Clamps.

3



When the module is level with the roof, verify both butyl portions of the Omega Mounts are positioned entirely on one course of composition. If required, loosen the Riser bolt and adjust the base as needed then tighten the bolt.

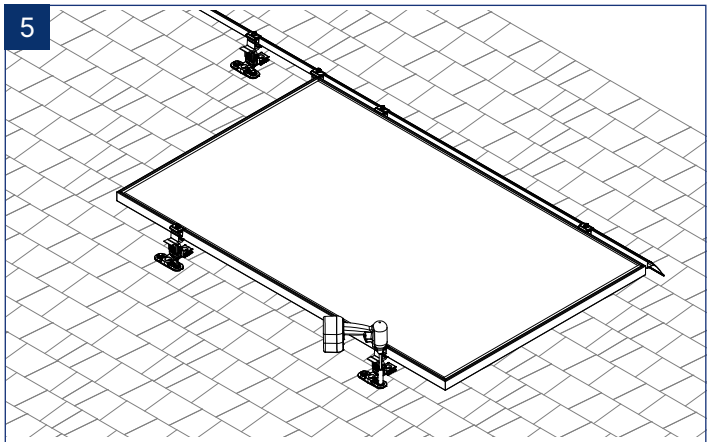
4



Lift the upslope edge of the module and ensure the backing is removed from each butyl pad.

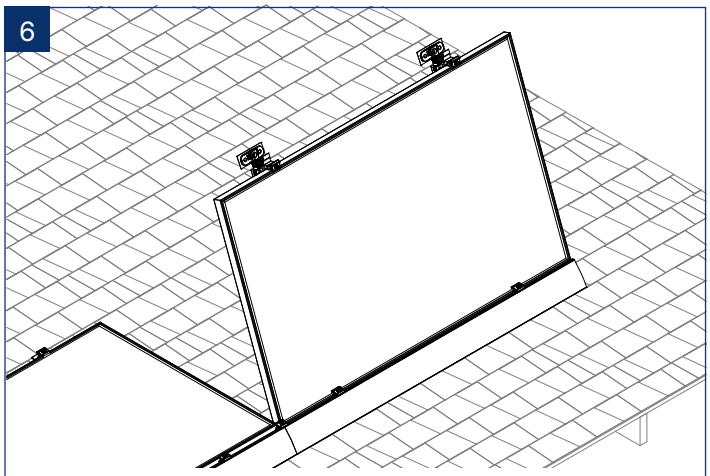
Install Note:
Seal any vertical shingle gaps within 4" from the edge of the base with roofing sealant.

5



Lower the module to the roof and drive the (2) SnapNrack DeckAnchors into the decking, tightening until the EPDM washers compress slightly.

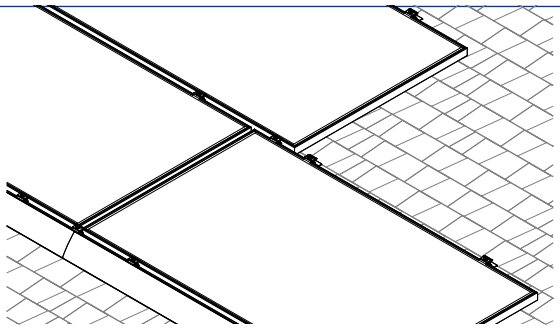
6



Repeat that process for additional modules in the array.

Installation Instructions

5



For staggered arrays and arrays with mixed orientation, use the Omega Clamp as needed to support the modules.

Install Note:
When installing a Omega Clamp for support of an over-cantilevered module, the clamp shall be installed 2-6" from the edge of the upslope (cantilevered) module.

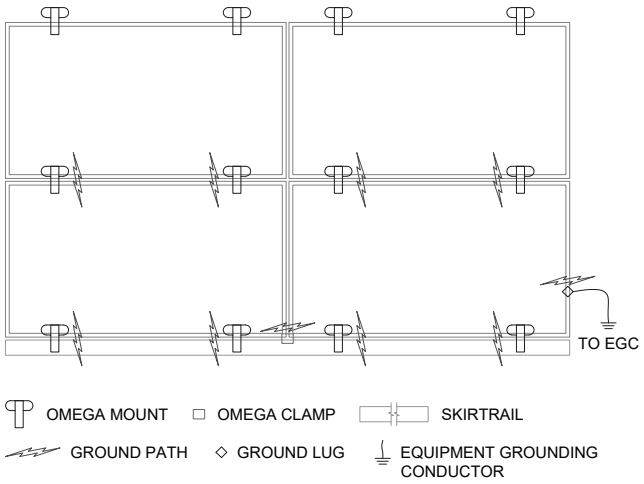
Grounding Specifications

Ground Path Details

All Omega components in the fault current ground path have been Certified to be used multiple times for grounding/bonding. The UL 2703 Listing does not specify a maximum number of uses for the Mount, Clamp, or Ground Lug. Review the requirements of the National Electrical Code (NEC) Article 250 to select the appropriate Equipment Grounding Conductor size based on the short-circuit current of the PV system.

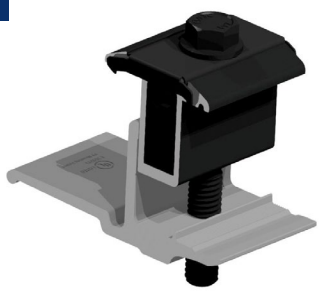
When using SnapNrack Ground Lug the following components are part of the fault current ground path:

- Omega Mount Assembly
- Omega Clamp (or Omega Link) Assembly
- SkirtRail



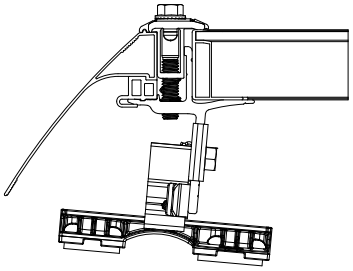
Grounding Method Details

1



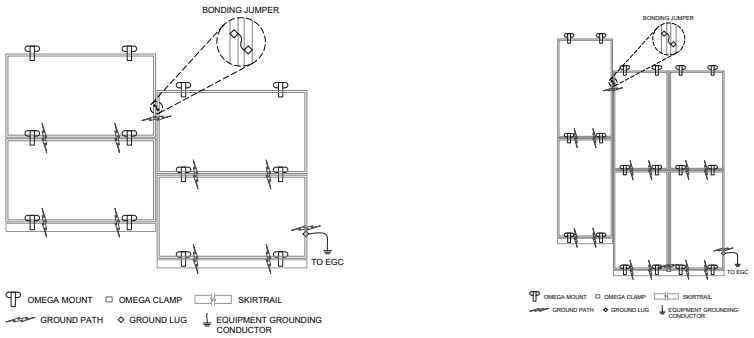
Row to row module bonding provided by bonding clips in Mount assembly and Clamp assembly.

2



Column to column bonding provided by SkirtRail and bonding clips in the Clamp assembly and/or Link assembly. Module heights evaluated for bonding with Link Bonding Clamps: 40mm, 38mm, 35mm, 32mm, 30mm.

3

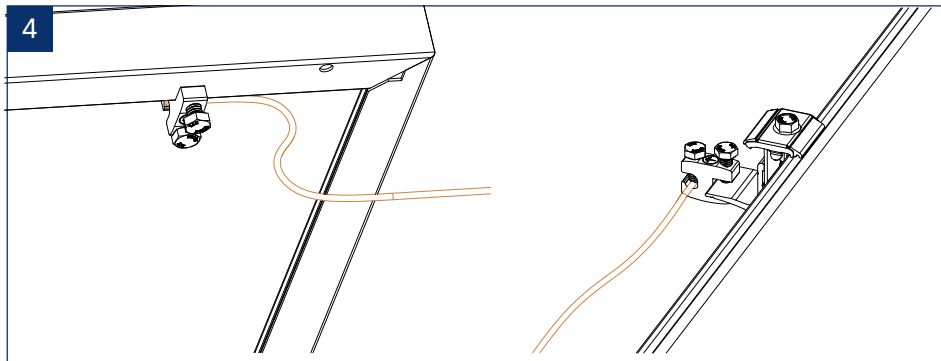


When the column to column bonding path is interrupted by shifting a column up or down, a Bonding Jumper is required to bond adjacent columns. Connect columns using either (2) SnapNrack Ground Lugs and a short piece of bare copper, or a DynoRaxx Dynobond between module frames.

Grounding Specifications

Grounding Method Details

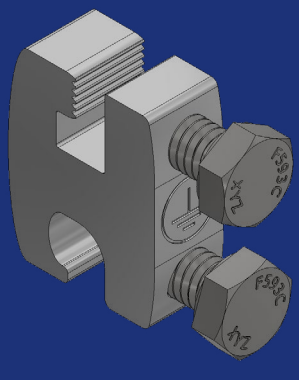
4



Each continuous array is connected to Equipment Grounding Conductor through Ground Lug WM-GROUNDLUG (formerly 242- 92202) installed on one module per array.

Optionally: Install Ground Lug on the Mount Landing Pad at the top of the array.

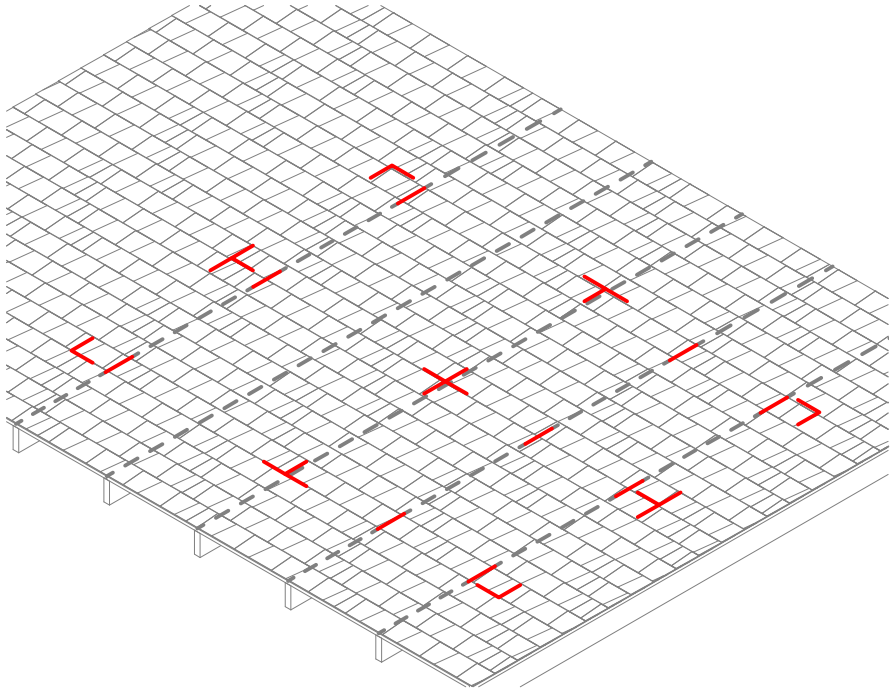
Ground Marking Details:
The Ground Lug is marked with the ground symbol.



Roof-First Mounting (RFM) Installation

System Layout

- When roof-first mounting (RFM), you can either attach directly to the decking or into structural members (rafters)
- RFM is driven by the allowable mount spacing based on design conditions for the project/installation (i.e. wind speed, snow load, building height, roof pitch, etc.)
    - There is no minimum number of mounts required per module
    - Mounts can be located anywhere along the module frame
- Consult the structural engineering documentation and/or Blueprint tool available on the SnapNrack website to verify
    - Plansets should have this information already available, as well
- Multiple fasteners can be used when installing RFM, depending on the attachment method
    - Direct to Decking
        - (2) DeckAnchors
        - (4) #14 Wood Screws
    - Structural Members
        - (1) 5/16" Lag Screw - min. 2.5" embedment
            - It is recommended that the upslope center hole be used with lag screws so the larger butyl pad can be utilized to cover any missed pilot holes (one of the center holes must be used)
        - (2) #14 Wood Screws - min 1.25" embedment
- Use a tape measure to verify that all modules will fit properly on the roof surface
- On the roof, draw the system layout including module gaps (recommended 0.75 inch gap), bottom and top corners
- Within the array, mark locations of the Omega mounts in compliance with the allowable mount spacing determined above or defined in the planset



Mount to Roof Installation - Direct to Decking

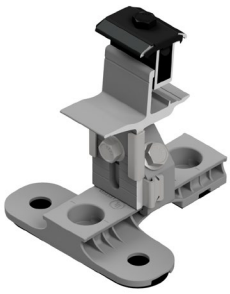
Required Tools

- Socket Wrench/Impact Driver
- Torque Wrench
- 1/2" Socket

Materials

1. Omega Mount
2. (2) DeckAnchors or (4) #14 Wood Screws

1



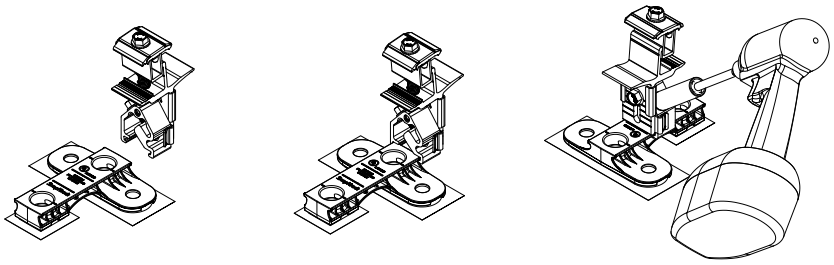
2



Mount to Roof Installation - Direct to Decking

Installation Instructions - (2) DeckAnchors

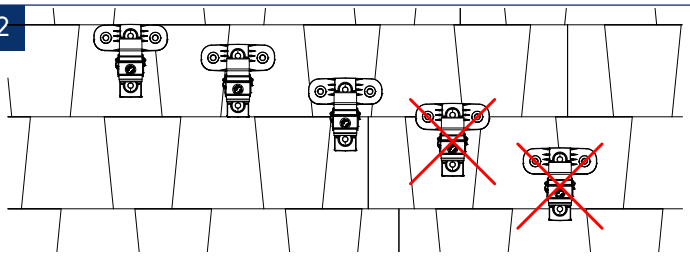
1



Install Omega top clamp sub-assembly onto base by sliding it onto the upper flanges of the base, then snugging up N-S adjustment bolt.

Install Note:
Ensure top clamp sub-assembly is oriented the correct way in relation to the base, the longer module landing pad and “wings” of the base should be on the same (upslope) side.
ALTERNATIVELY: Omega bases can be installed onto the roof without top clamp sub-assembly pre-installed, if desired.

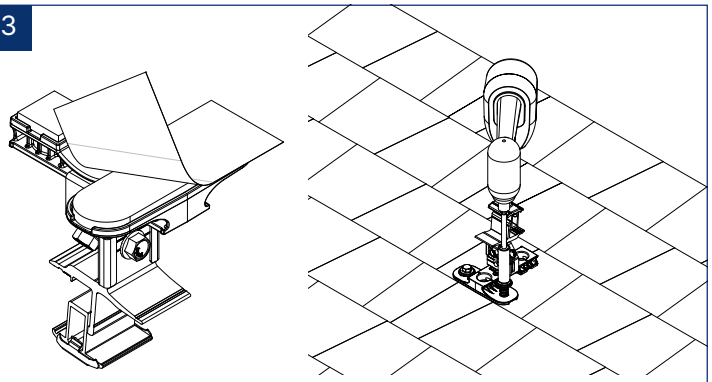
2



Using roof attachment locations drawn during system layout, determine position of Omega mount for proper alignment on shingle course.

Install Note:
Verify both butyl portions of the Omega Mounts are positioned entirely on one course of composition, and fill any seam in shingles within 4” of a fastener with sealant prior to installing mount.

3

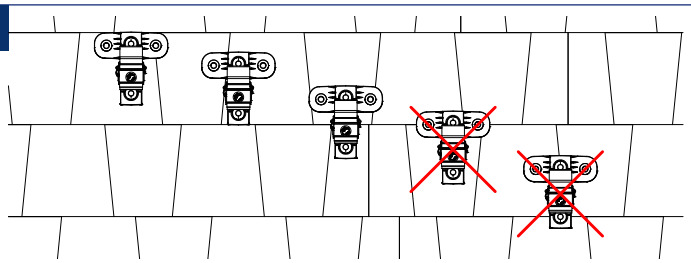


Remove the protective backing from both butyl pads, place mount on roof surface, and drive (2) DeckAnchors into decking until the EPDM washers compress slightly.

Mount to Roof Installation - Direct to Decking

Installation Instructions - (4) Wood Screws

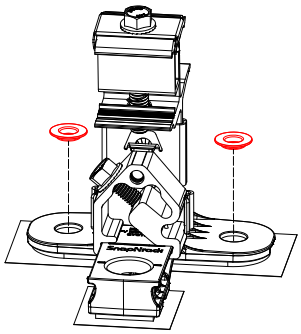
1



Using roof attachment locations drawn during system layout, determine position of Omega mount for proper alignment on shingle course.

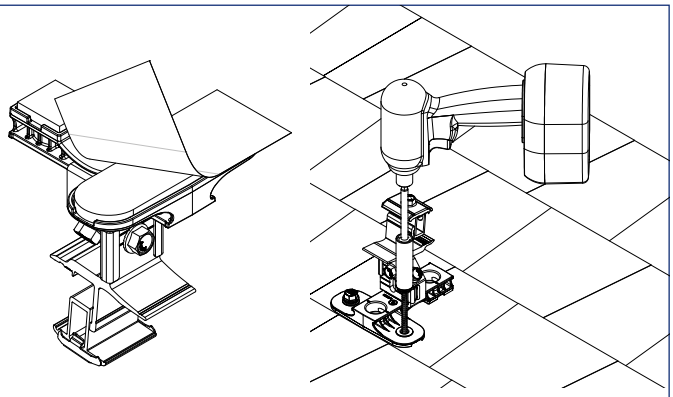
Install Note:
Verify both butyl portions of the Omega Mounts are positioned entirely on one course of composition, and fill any seam in shingles within 4″ of a fastener with sealant prior to installing mount.

2



When using wood screws, two screw adapters must be inserted into the outer holes of the Omega Mount.

3



Remove the protective backing from both butyl pads, place mount on roof surface, and drive (4) #14 wood screws into decking until the EPDM washers compress slightly.

Mount to Roof Installation - Structural Members

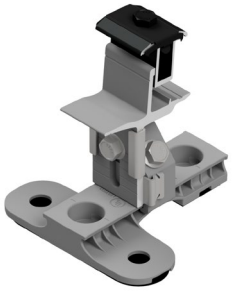
Required Tools

- Hammer or Stud Finder
- Drill with 3/16" Drill Bit (Lag Screw Install)
- Socket Wrench/Impact Driver
- Torque Wrench
- 1/2" Socket

Materials

1. Omega Mount
2. (1) 5/16" Lag Screw or (2) #14 Wood Screws

1



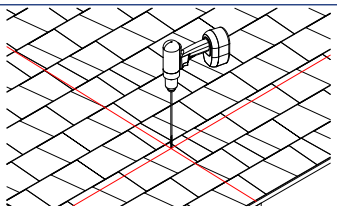
2



Mount to Roof Installation - Structural Members

Installation Instructions - (1) 5/16" Lag Screw

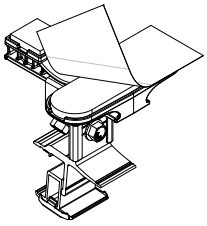
1

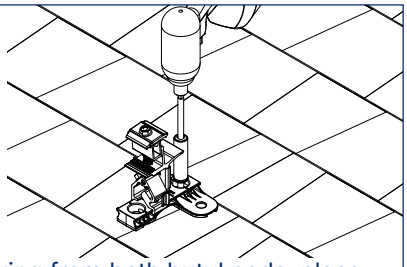


Using roof attachment locations drawn during system layout, determine position of Omega Mount for proper alignment on shingle course and drill pilot hole at location of center mounting hole.

Install Note:
Verify both butyl portions of the Omega Mounts are positioned entirely on one course of composition, and fill any seam in shingles within 4" of a fastener with sealant prior to installing mount.

2



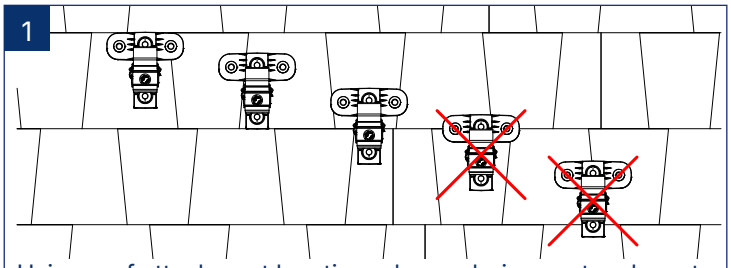


Remove the protective backing from both butyl pads, place mount on roof surface, and drive (1) 5/16" lag screw into the rafter until the EPDM washers compress slightly.

Install Note:
It is recommended that the upslope center hole be used with lag screws so the larger butyl pad can be utilized to cover any missed pilot holes (one of the center holes must be used).

Installation Instructions - (2) #14 Wood Screws

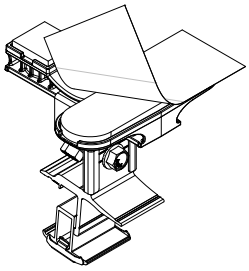
1

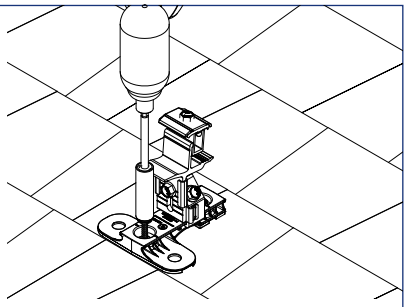


Using roof attachment locations drawn during system layout, determine position of Omega Mount for proper alignment on shingle course.

Install Note:
Verify both butyl portions of the Omega Mounts are positioned entirely on one course of composition, and fill any seam in shingles within 4" of a fastener with sealant prior to installing mount.

2



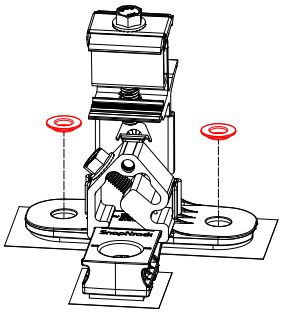


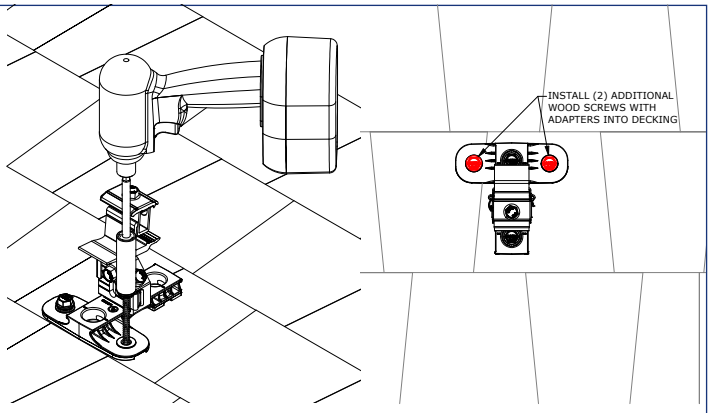
Remove the protective backing from both butyl pads, place mount on roof surface, and drive (2) #14 Wood Screws into the rafter until the EPDM washers compress slightly.

Install Note:
Center holes must be used for this installation.

If the rafter is missed, the following must be done:

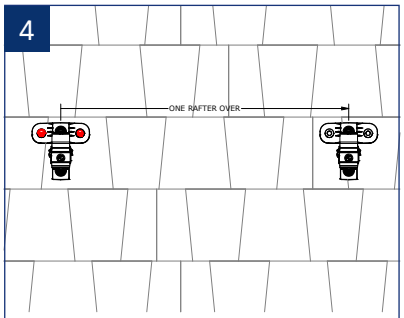
3





Two additional #14 wood screws (with Wood Screw Adapters) need to be installed in the remaining mount holes.

4



One additional mount needs to be installed in the adjacent rafter.

Omega SkirtRail Installation

Required Tools

- Chalk
- Tape Measure
- Socket Wrench/Impact Driver
- Torque Wrench
- 1/2" Socket
- 3" Minimum Socket Extension (Optional)

Materials

1. SkirtRail
2. SkirtRail Spacers
3. SkirtRail Cap - Optional

1



2



3



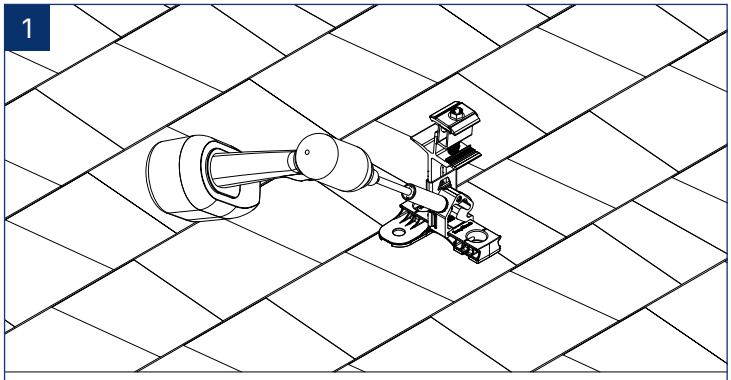
Layout Instructions

- Use a tape measure to verify that all modules will fit properly on the roof surface.
- Mark rafter locations per the System Layout section above.
- On the roof, draw the layout for the SkirtRail installation including module gaps (recommended 0.75 inch gap), bottom corners, and locations of the two Omega attachments per module that clamp to the SkirtRail. Ensure rafters are avoided, as outlined in the System Layout section above.

Omega SkirtRail Installation

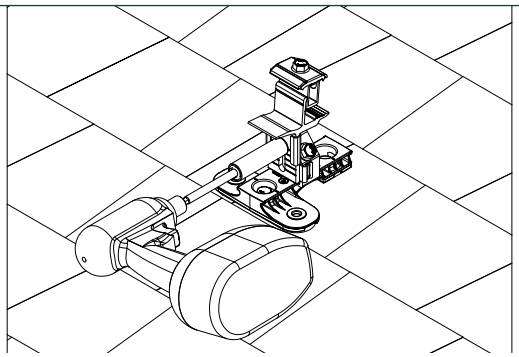
Installation Instructions

1



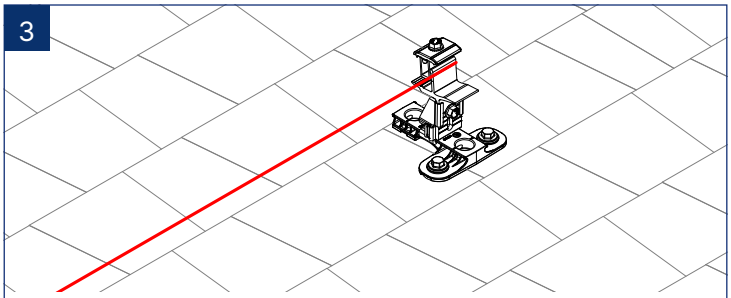
Adjust the bottom two corner Omega Mounts up or down until aligned with the bottom edge of array as marked on the roof, then tighten the Riser bolts.

2



To set the Omega Mount level, loosen the Leveler bolt and move the Leveler up or down, then tighten and torque to 16 ft-lb.

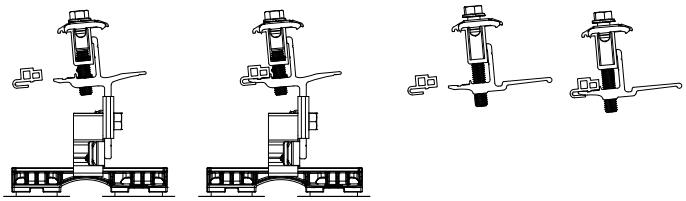
3



Run string line along bottom row to align and level remaining Omega Mounts between the two corner mounts.

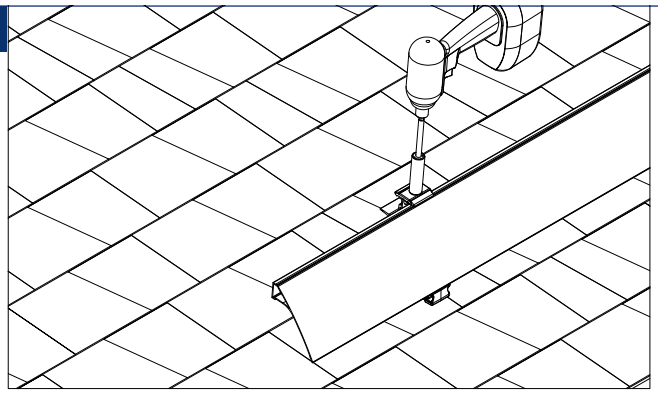
Install Note:
Use the string line catch and alignment feature on Mounts to hold the string line in place to level and align the Mounts.

4



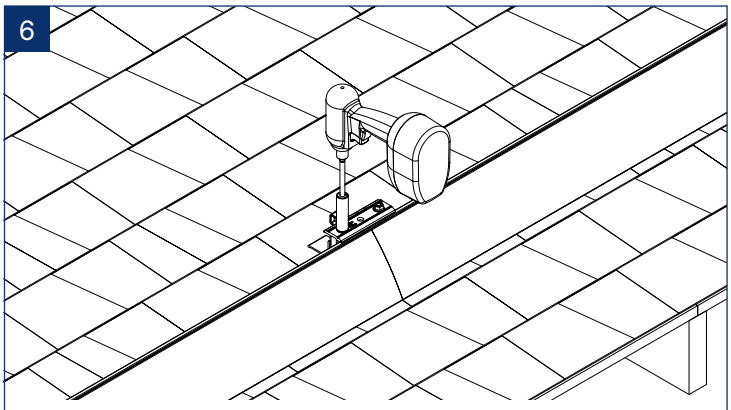
Omega SkirtRail Spacers will need to be added to all Omega Mounts and Links where SkirtRail will be installed.

5



Install Universal SkirtRail by holding it in Mount(s), sliding to align with array layout marks, and clamping into mount.

6



Use Omega Links (with two correct spacers installed) to connect multiple lengths of SkirtRail.

Wire Management

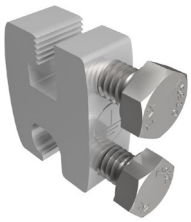
Required Tools

- Socket Wrench/Impact Driver
- Torque Wrench
- 1/2" Socket
- Electrician Tools

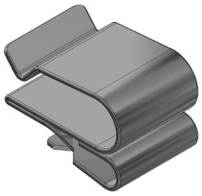
Materials

1. SnapNrack Ground Lug
2. Smart Clip [2 PV Wires, 1 Enphase IQ Cable]
3. Smart Clip XL [6 PV Wires, 4 Enphase IQ Cables]
4. Wire Saver [1 PV Wire]

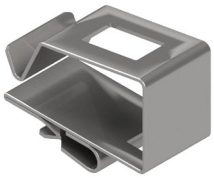
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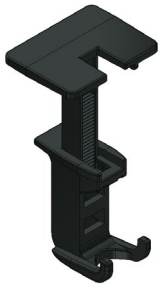
2



3



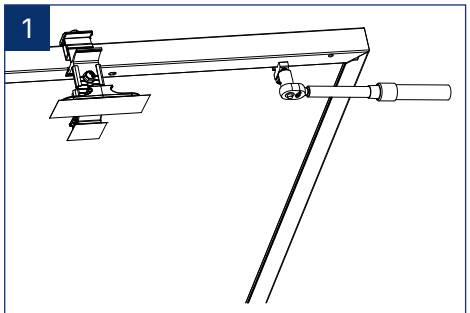
4



Wire Management

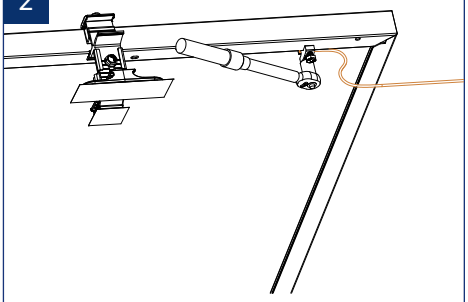
Installation Instructions - Ground Lug

1



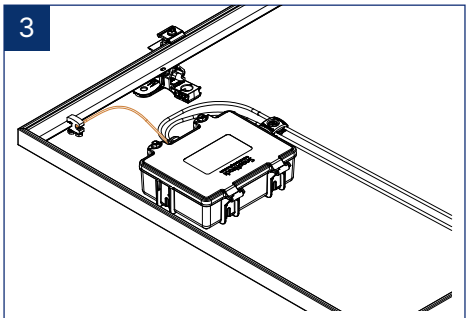
SnapNrack Ground Lug can be attached anywhere along the module frame or any Omega Mount near the Junction Box. Torque module clamping bolt to 8 ft-lbs [10.8 Nm].

2



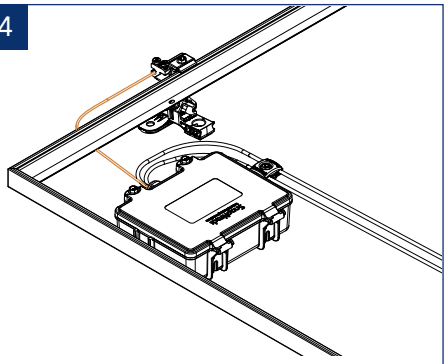
Run 10 – 6 AWG, solid, bare copper GEC into Ground Lug channel, torque wire clamping bolt to 8 ft-lbs [10.8 Nm].

3



Run bare, solid EGC from SnapNrack Ground Lug to Junction Box, bond bare EGC to stranded EGC in Junction Box. For details on installing the Junction Box, reference the Junction Box Installation Manual(s).

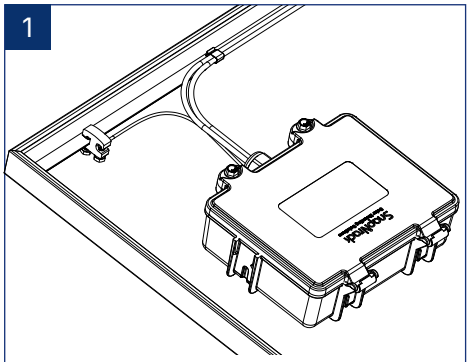
4



Optionally: Install Ground Lug on the Mount Landing Pad at the top of the array. Run bare copper between ground lug and Junction Box.

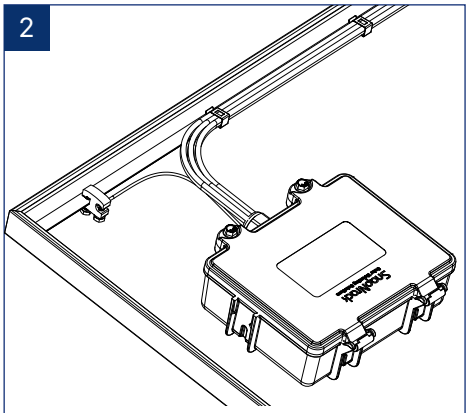
Installation Instructions - Smart Clips

1



Use SnapNrack Smart Clip II to manage up two PV wires inside the module frame while prepping out the modules on the ground or installing modules on the roof.

2



Use SnapNrack Smart Clip XL to manage larger bundles of PV wire, up to 6 PV wires per clip.

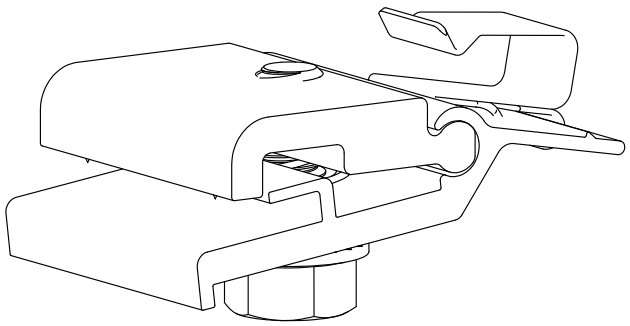
MLPE & RSD Installation

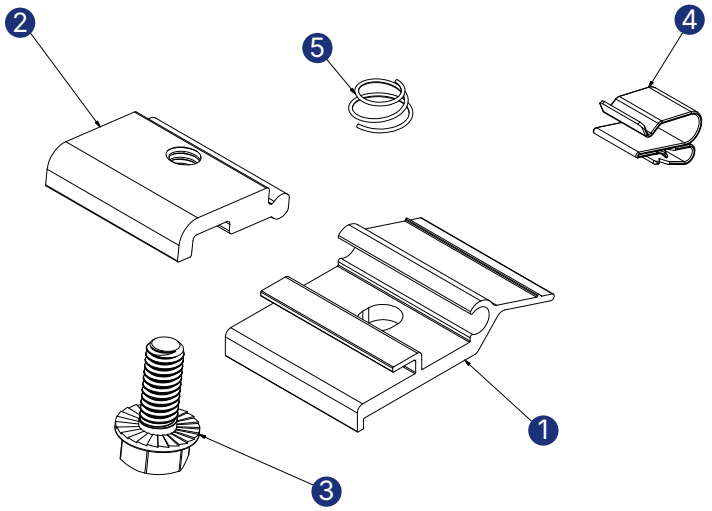
Required Tools

- Socket Wrench/Impact Driver
- Torque Wrench
- 1/2" Socket

Materials Included - MLPE Rail Attachment Kit

1. (1) SnapNrack MLPE Frame Attachment Top
2. (1) SnapNrack MLPE Frame Attachment Bottom
3. (1) 5/16"-18 × 3/4" Serrated Flange Bolt SS
4. (1) SnapNrack Smart Clip
5. (1) SnapNrack MLPE Frame Attachment Coil Spring SS

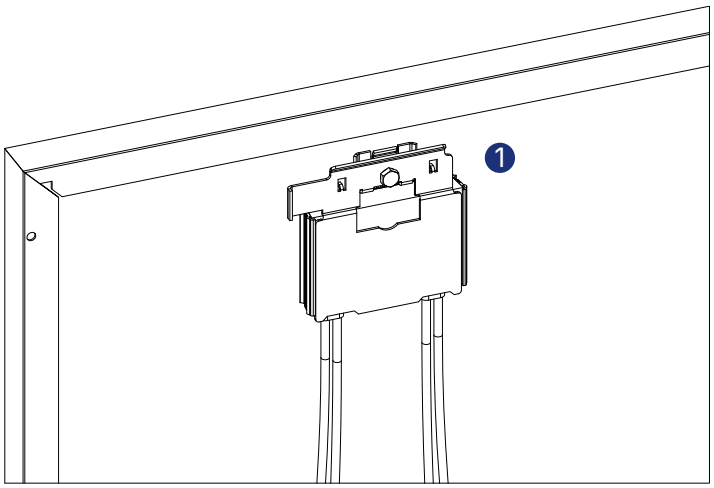




Materials Included

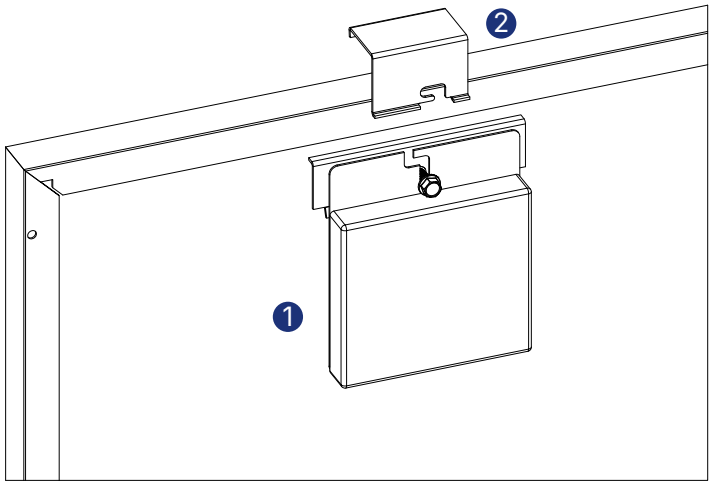
SolarEdge Frame Mount

1. (1) SolarEdge Optimizer w/ Frame-Mounted Module Add-On



Enphase Frame Mount

1. (1) Enphase Microinverter
2. (1) Enphase Frame Mount

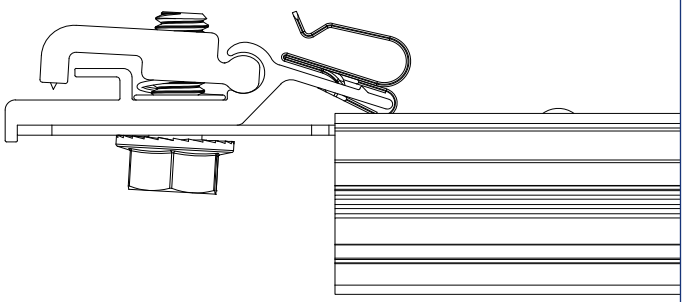


MLPE & RSD Installation

Installation Instructions - SnapNrack MLPE Frame Attachment Kit

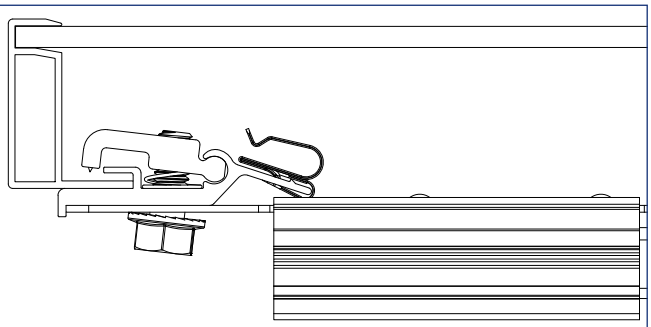
SnapNrack MLPE Frame Attachment kit are used to attach module level performance enhancing devices, and other devices such an SRD (rapid shutdown device), directly to module frames, and provide integrated grounding/bonding for Devices grounded through metal back plate. (Refer to the list of tested MLPE devices on page 29 of this manual).

1



Slide the backplate channel of the MLPE device under the MLPE Frame Attachment Kit bolt. The MLPE mounting plate should rest against the MLPE mounting plate backstop on the MLPE Frame Attachment Kit.

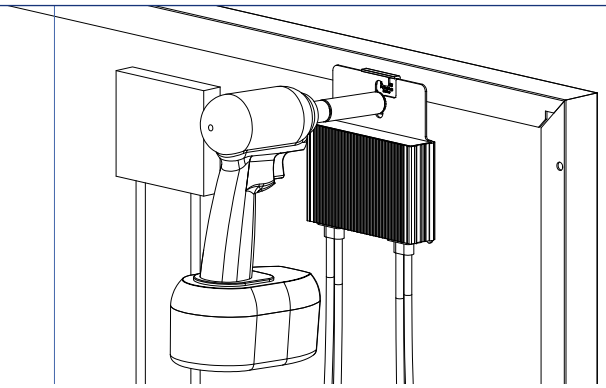
2



Position the MLPE Frame Attachment Kit on the module frame flange in a location that will not interfere with mounting system components. The module frame flange should rest against the module flange backstop on the MLPE Frame Attachment Kit.

Install Note:
Avoid blocking module frame drainage holes when installing the MLPE Frame Attachment Kit.

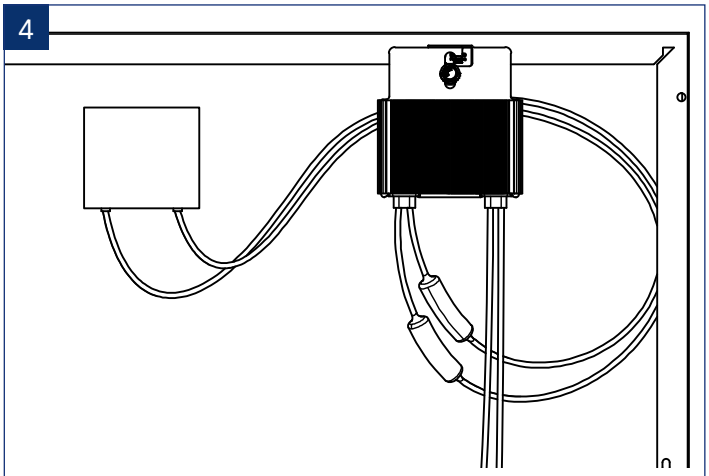
3



Tighten the mounting bolt on the MLPE Frame Attachment Kit to 12 ft-lb [16.3 N.m].

Install Note:
The MLPE Frame Attachment Kit bonds the following components: Module Frame, MLPE backplate and Smart Clip.

4

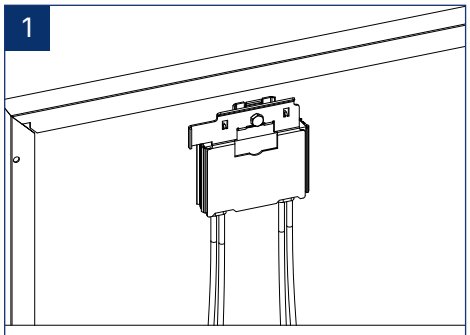


Connect the module leads to the input connectors on the MLPE device and manage conductors with the integrated Smart Clip.

MLPE & RSD Installation

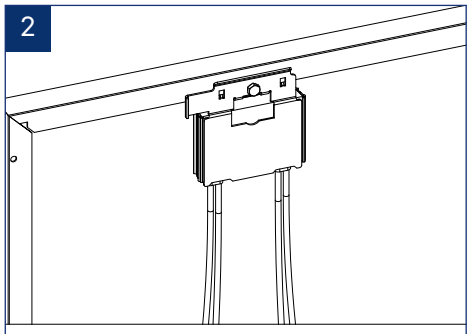
Installation Instructions - SolarEdge Frame Mount

1



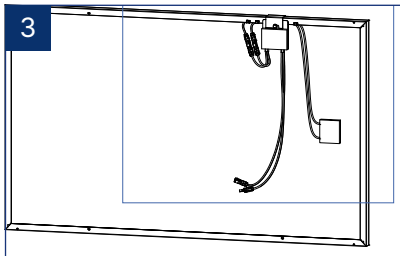
Locate the SolarEdge optimizer with Frame-Mounted Module Add-On at a location on the module frame that will not interfere with the Omega Mounts.

2



Install the optimizer mounting plate onto the module frame and tighten hardware to 11 ft-lbs [14.9 N.m].

3

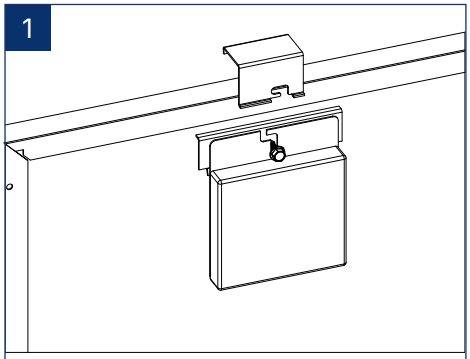


Connect the module leads to the input connectors on the optimizer and manage conductors with SnapNrack Smart Clips.

Install Note:
If module is mounted in portrait, install MLPE on long side, short side for landscape.

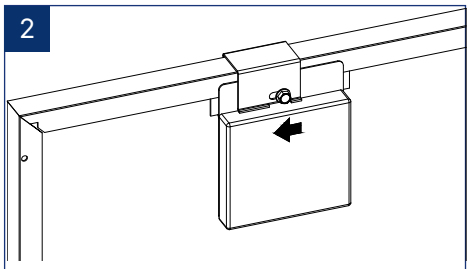
Installation Instructions - Enphase Frame Mount

1



Locate the Enphase Frame Mount bracket clamp at a location on the module frame that will not interfere with the Omega Mounts.

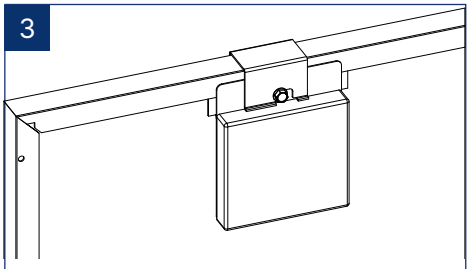
2



Slide the microinverter unit onto the bracket clamp, then move it slightly to the left.

Install Note:
The microinverter mounting flange should be on the outside of the module frame.

3



Tighten the hardware to 13 ft-lbs [17.6 N.m].
Connect module leads to microinverter DC connectors.

Install Note:
Refer to the Enphase Frame Mount installation guide for additional instructions.

Module Installation

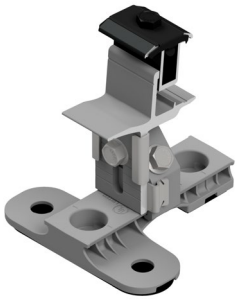
Required Tools

- Socket Wrench/Impact Driver
- Torque Wrench
- 1/2" Sokcet
- 3" Minimum Socket Extension (Optional)

Materials Included

1. (1+) Omega Mount
2. (1+) Omega Link

1



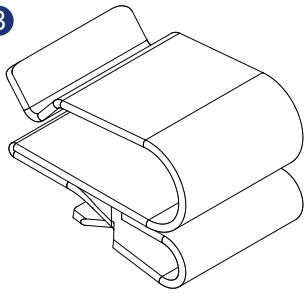
2



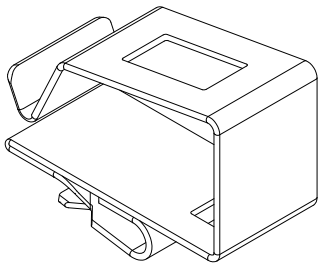
Other Materials Required

3. SnapNrack Smart Clip (2-5 per module)
   See Wire Management section for details
4. SnapNrack Smart Clip XL (10-20 per array)
   See Wire Management section for details

3



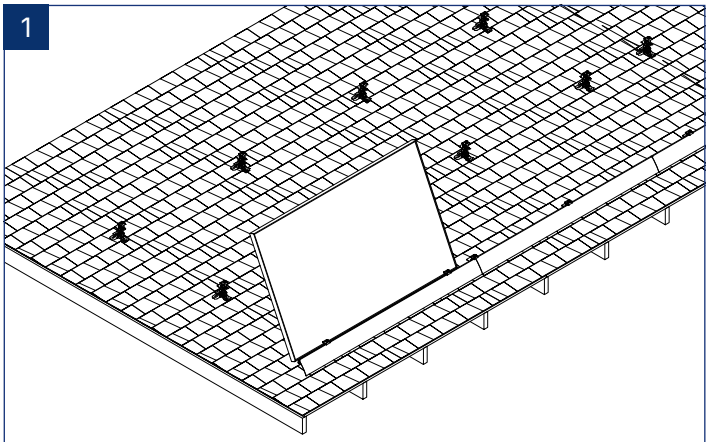
4



Module Installation

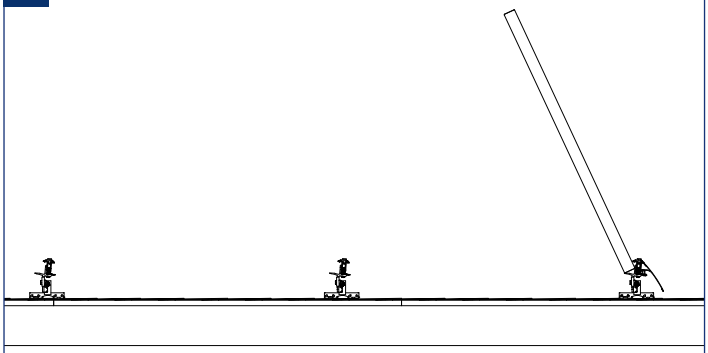
Installation Instructions

1



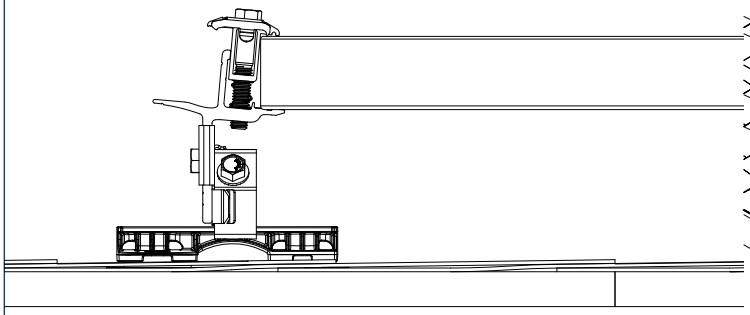
Rest downslope edge of module on the Omega Mounts and/or Links, then position module so side edge is flush with marked edge of array layout.

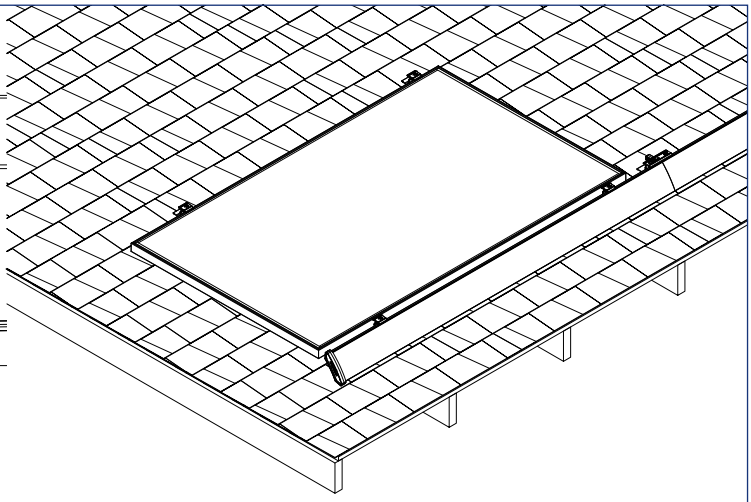
2



Lower upslope edge of module while simultaneously applying slight pressure to seat module into Omega Mounts and/or Links.

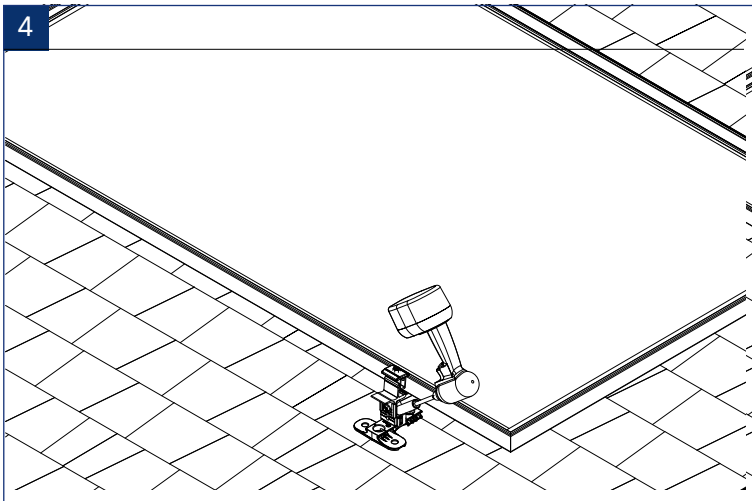
3

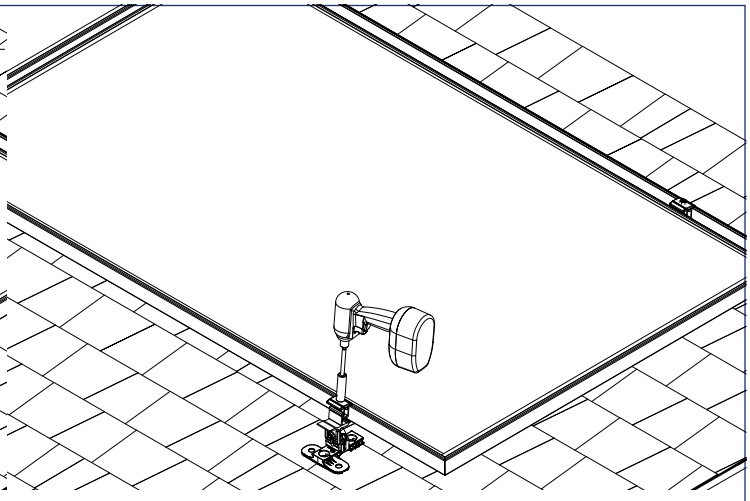




When module is level with roof, slide Mount down and engage Mount clamp on upslope edge of module.

4



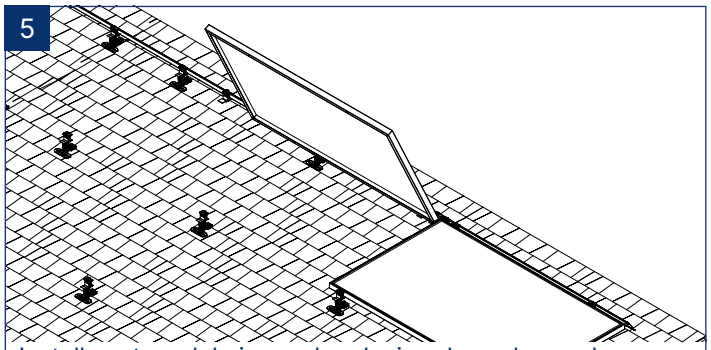


With the Mount fully engaged on the module frame first tighten Riser bolt, then tighten Mount clamp bolt.

Module Installation

Installation Instructions

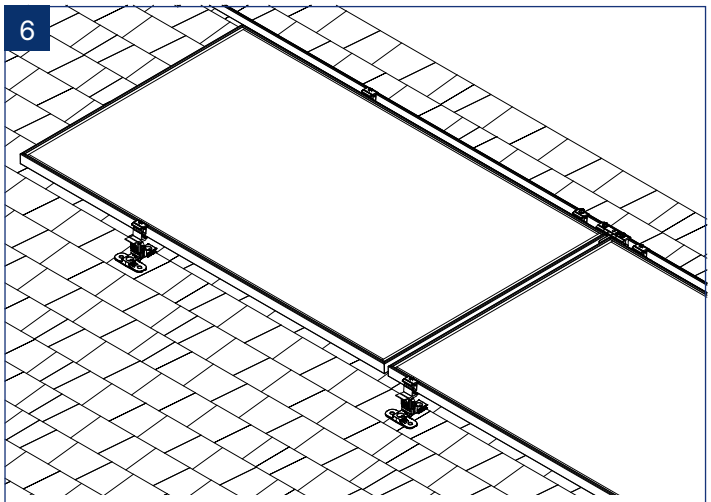
5



Install next module in row by placing downslope edge of module on Omega Mounts and/or Links then lower upslope edge of module until level with roof.

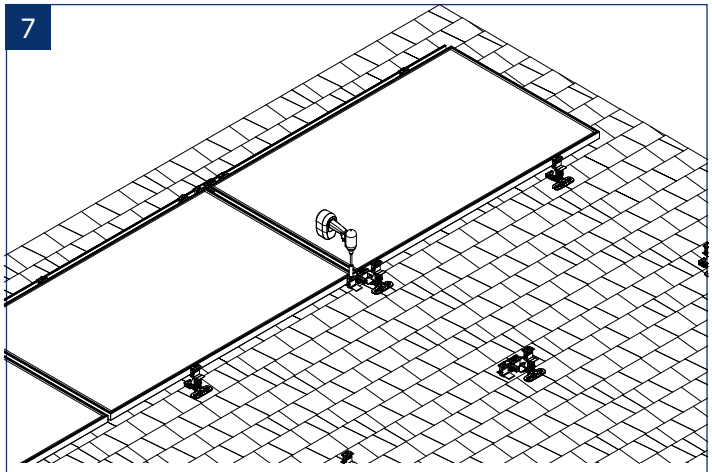
Install Note:
Push modules together so they are tight against the Link module spacer.

6



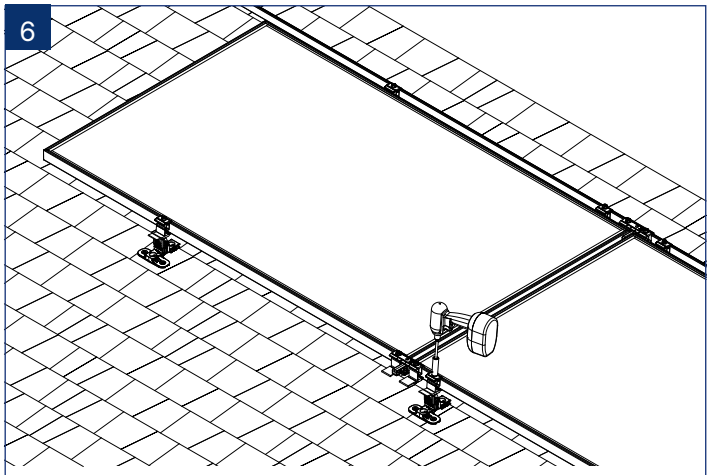
Slide Mount down and position it to support the module.

7



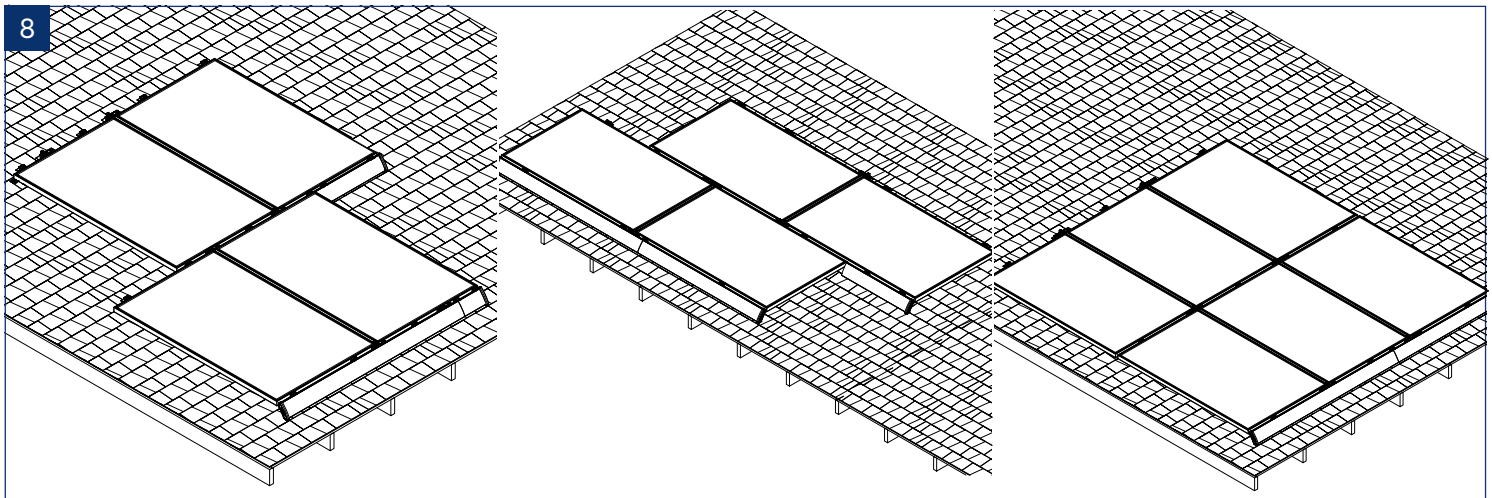
Attach Link to upslope side of modules and tighten clamp bolts to engage both modules.

6



Engage Mounts on the module frame and tighten channel nut bolt, then tighten Mount clamp bolt to 16 ft-lbs.

8



Repeat that process for additional rows of modules in array.

Mount-Link Interference

Required Tools

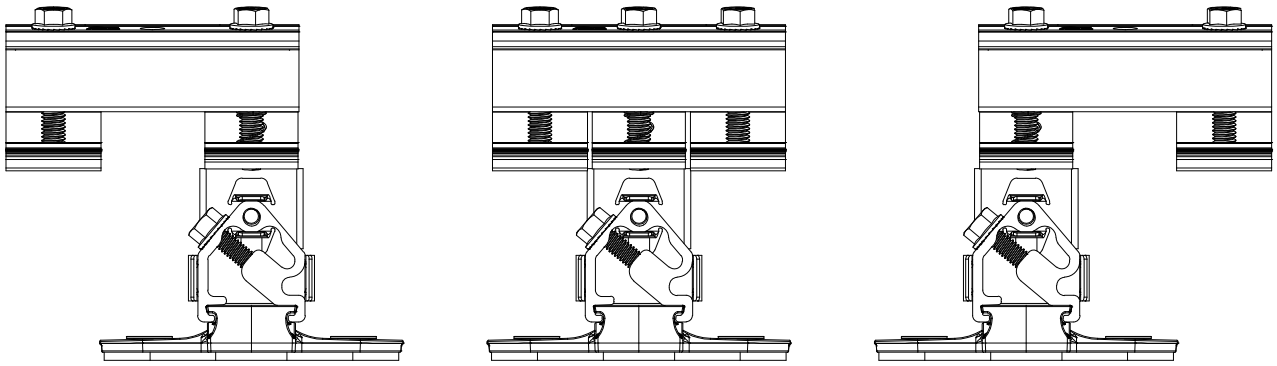
- Socket Wrench/Impact Driver
- Torque Wrench
- 1/2" Sokcet
- 3" Minimum Socket Extension (Optional)

Materials Included

1. (1+) Omega Mount
2. (1+) Omega Link

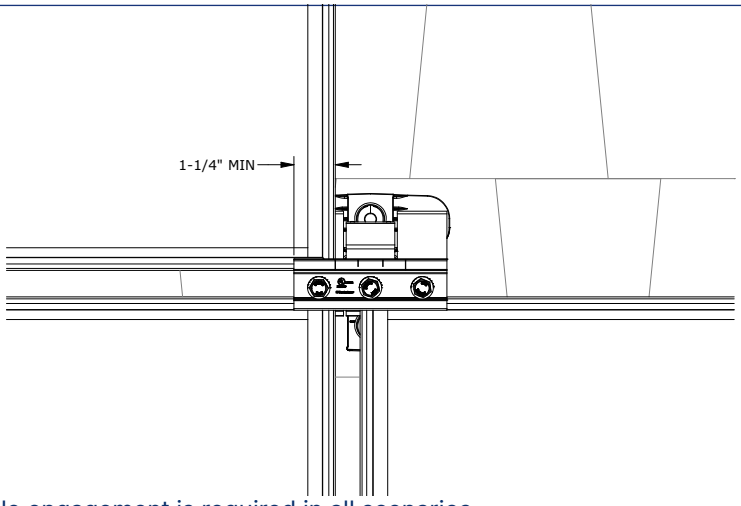
Installation Instructions

1



When an Omega Link lands at the same location as an installed Omega Mount, the link can be installed onto the Mount (in place of the clamp top).
All three holes in the link can be used depending on the situation and module coverage needed.
A socket extension (3″ minimum) is required to access the Riser bolt for N-S adjustment when a Link has been installed onto the Mount.

2



A minimum 1-1/4″ of module engagement is required in all scenarios.

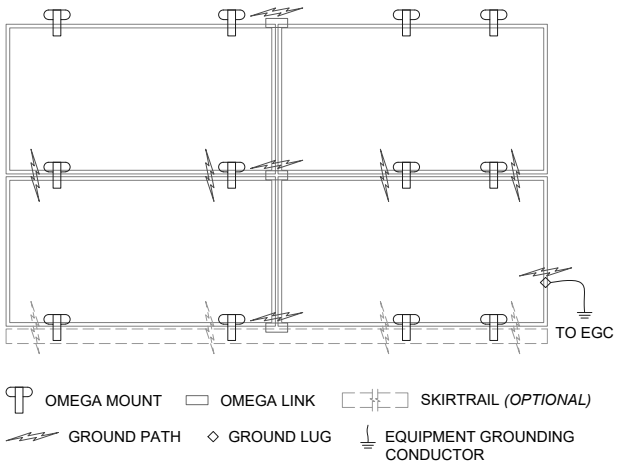
Grounding Specifications

Ground Path Details

All Omega components in the fault current ground path have been Certified to be used multiple times for grounding/bonding. The UL 2703 Listing does not specify a maximum number of uses for the Mount, Clamp, or Ground Lug. Review the requirements of the National Electrical Code (NEC) Article 250 to select the appropriate Equipment Grounding Conductor size based on the short-circuit current of the PV system.

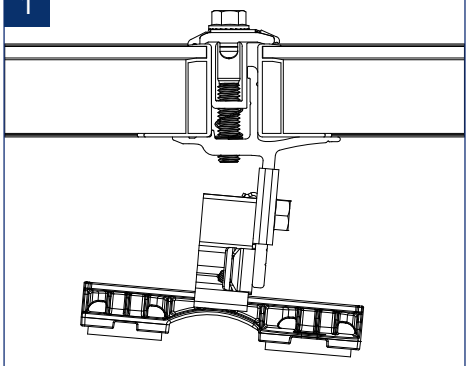
When using SnapNrack Ground Lug the following components are part of the fault current ground path:

- Omega Mount Assembly
- Omega Link Assembly
- SkirtRail



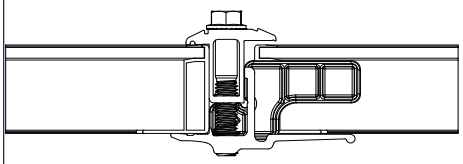
Grounding Method Details

1



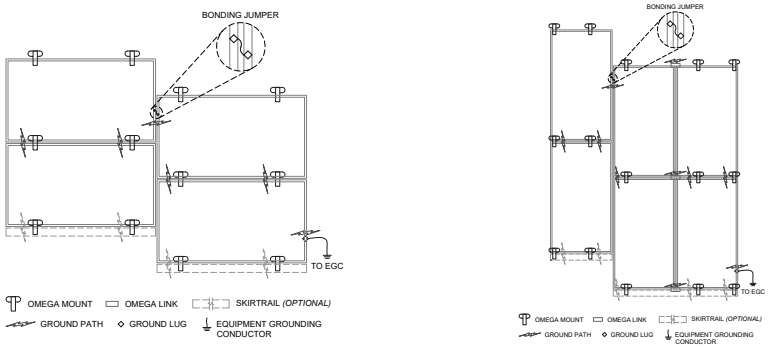
Row to row module bonding provided by bonding clip in Mount assembly.

2



Column to column bonding provided by bonding clamp in Link assembly. Module heights evaluated for bonding with Link Bonding Clamps: 40mm, 38mm, 35mm, 32mm, 30mm.

3

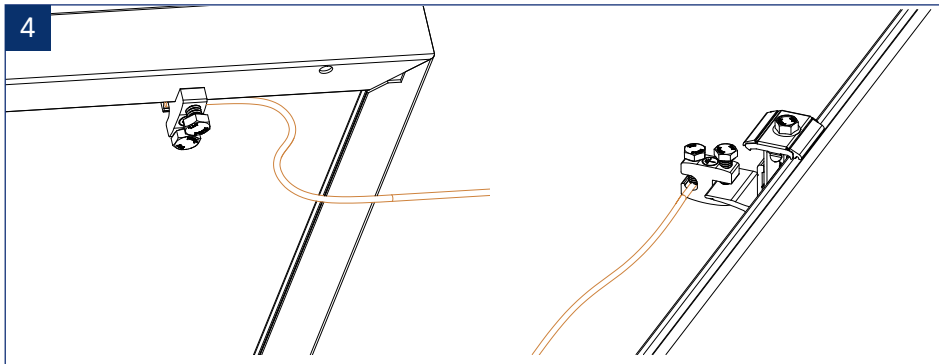


When the column to column bonding path is interrupted by shifting a column up or down, a Bonding Jumper is required to bond adjacent columns. Connect columns using either (2) SnapNrack Ground Lugs and a short piece of bare copper, or a DynoRaxx Dynobond between module frames.

Grounding Specifications

Grounding Method Details

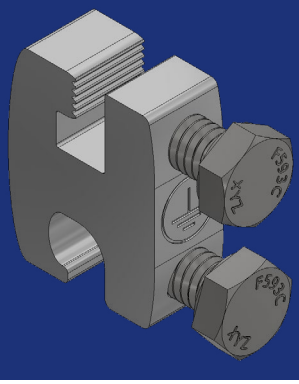
4



Each continuous array is connected to Equipment Grounding Conductor through Ground Lug WM-GROUNDLUG (formerly 242- 92202) installed on one module per array.

Optionally: Install Ground Lug on the Mount Landing Pad at the top of the array.

Ground Marking Details:
The Ground Lug is marked with the ground symbol.



Grounding Specifications

Instructions for Maintaining the Grounding and Bonding When Removing a Module for Servicing

CAUTION: Module removal may disrupt the bonding path and could introduce the risk of electric shock. Additional steps may be required to maintain the bonding path. Modules should only be removed by qualified persons in compliance with the instructions in this manual.

Module removal is not presented as a frequently expected occurrence and will not be required as part of routine maintenance.

Scenarios that could result in a disruption of the bonding path are described, for example irregularly-shaped arrays, arrays consisting of individual rows, and any other scenario where module removal could disrupt the bonding path. In most cases, the removal of a module for servicing will not disturb or break grounding continuity. If a module is to be removed that will break continuity, these are the steps that must be taken to maintain a continuously bonded SnapNrack Omega System.

Required Tools

- Socket Wrench
- Torque Wrench
- 1/2" or 13mm Socket
- 7/16" Socket

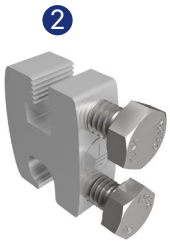
Materials Required

1. #10 or Larger Bare Copper Conductor

   Choose one of the following:

2. SnapNrack Ground Lug
3. Ilsco Part No. SGB-4
4. DynoRaxx Dynbond™ (no bare copper required)









Maintaining the Grounding and Bonding When Removing a Module

CAUTION: Do not remove the module until the jumper is installed.

Identify the existing ground path at the location of module removal and choose an appropriate length of #10 bare copper to bridge the soon to be broken ground path.

Attach one ground lug to each end of #10 bare copper wire, see recommended options below:
- (2) SnapNrack Ground Lug WM-GROUNDLUG (formerly 242-92202)
- (2) Ilsco Part No. SGB-4

Alternatively, the following can be used with no additional bare copper:
- (1) DynoRaxx DynoBond™

Before the module is removed, attach the assembled bonding jumper. Depending on where the module will be removed and choice of ground lug, jumper attachment locations will vary.
- SnapNrack Ground Lug, SKU: WM-GROUNDLUG (formerly 242-92202) or Ilsco SGB-4 lugs can be attached to module frames or anywhere on the Omega Mount
- DynoRaxx DynoBond™ is approved and appropriate when a short bonding jumper is needed from module to module

Service the array. With the bonding jumper installed, it is now safe to remove the module for service or maintenance.

After Servicing the array reinstall the module and original ground path. Only then remove the bonding jumper.
- **CAUTION:** Do not remove the bonding jumper until original ground path is established

Approved Modules

SnapNrack Omegal has been tested with the following UL Listed module series:

The SnapNrack TopSpeed Original system employs top-down clamps and links which have been evaluated for frame-to-system bonding, at specific mounting torques and with the specific module series listed below. All wattage values are covered.

Module manufacturer approval letters can be found at www.snapnrack.com.

Manufacturer	Model		
AMPs Solar	AMPS-XXX-54BB	AMPS-XXXN-108BB	AMPS-XXXN-144SW
Aptos Solar	DNA-120-MF23-XXX	DNA-120-MF26-XXXW	DNA-108-BF10-XXXW
	DNA-120-BF23-XXX	DNA-144-MF26-XXXW	DNA-120-BF10-XXXW
	DNA-144-MF23-XXX	DNA-120-BF26-XXXW	DNA-108-MF10-XXXW
	DNA-144-BF23-XXX	DNA-144-BF26-XXXW	
Bluesun Solar	BSMXXXM-72HBD		
Boviet Solar	BVM7612M-XXX-H-HC-BF-DG		
Canadian Solar	CS6K-XXX-M	CS3U-XXX-MS	CS1Y-XXX-MS
	CS6K-XXX-M-SD	CS3U-XXX-P	CS3W-MB-AG
	CS6K-XXX-P	CS1K-XXX-MS	CS3Y-MB-AG
	CS6K-XXX-P-SD	CS1H-XXX-MS	CS6W-XXXMB-AG
	CS6K-XXX-MS	CS1H-XXX-MS-AB	CS6R-XXXMS-HL
	CS3K-XXX-P	CS3W-XXX-P	CS3W-XXX-MS
	CS3K-XXX-MS	CS3N-XXX-MS	CS6.1-54TM-XXX-H
CertainTeed	CTXXXHC11-06	CTXXXHC11-9	CTTCXXXHC12-08
Chint Solar	CHSM6612M-XXX	CHSM6612M/HV-XXX	CHSM72M-HC-XXX* (Astro 5)
	CHSM6612M(BL)-XXX	CHSM72M-HC-XXX* (Astro 4)	
Crossroads Solar	Crossroads Solar XXX		
Dehui Solar	DH-M760B-XXXW	DH-M772W-XXXW	DH-M772F-XXXW*
	DH-M760W-XXXW	DH-M760F-XXXW*	
ES Foundry	ES-DN8-H54B	ES-DP8-H54B	
Freedom Forever	FF-MP-BBB-XXX		
G-Star	GSD7S72T-XXXWT		
Goldi	GAD54T-XXXBT	GAD72T-XXX-WT	
Hansol	HAXXXAA-NNEA0	HAXXXAA-DGEA0	HAXXXAB-DGEA0
Hanwha Q Cells	Q.PEAK DUO-G5-XXX	Q.PEAK DUO XL-G9.2-XXX	Q.TRON-G1+ XXX
	Q.PEAK DUO-BLK-G5-XXX	Q.PEAK DUO XL-G9.3-XXX	Q.TRON BLK-G1+ XXX
	Q.PLUS DUO-G5-XXX	Q.PEAK DUO XL-G9.3/BFG-XXX	Q.PEAK DUO XL-G10.c-XXX
	Q.PEAK DUO-G7-XXX	Q.PEAK DUO-ML-G9-XXX	Q.PEAK DUO XL-G10.d-XXX
	Q.PEAK DUO-BLK-G7-XXX	Q.PEAK DUO-BLK-ML-G9-XXX	Q.PEAK DUO BLK G10+/AC XXX
	Q.PEAK DUO-G7.2-XXX	Q.PEAK DUO-BLK-G9-XXX	Q.PEAK DUO BLK G10+/HL XXX
	Q.PEAK DUO-G6+-XXX	Q.PEAK DUO G10-XXX	Q.PEAK DUO ML-G10-XXX
	Q.PEAK DUO-BLK-G6+-XXX	Q.PEAK DUO BLK G10-XXX	Q.PEAK DUO BLK ML-G10+-XXX
	Q.PEAK DUO-G6-XXX	Q.PEAK DUO G10+-XXX	Q.PEAK DUO BLK ML-G10.B+
	Q.PEAK DUO-BLK-G6-XXX	Q.PEAK DUO BLK G10+-XXX	Q.PEAK DUO XL-G11.3 XXX
	Q.PEAK DUO BLK-G6+/AC-XXX	Q.PEAK DUO XL-G10.3-XXX	Q.PEAK DUO XL-G11.3 BFG XXX

Approved Modules

Manufacturer	Model		
Hanwha Q Cells	Q.PEAK DUO-BLK-G8-XXX	Q.PEAK DUO BLK ML-G10-XXX	Q.PEAK DUO ML-G12S.3/BFG
	Q.PEAK DUO-G8+-XXX	Q.PEAK DUO ML-G10.a+-XXX	Q.TRON M-G2+ XXX
	Q.PEAK DUO L-G8.3/BFG-XXX	Q.PEAK DUO BLK ML-G10.a+-XXX	Q.TRON BLK M-G2+ XXX
	Q.PEAK DUO L-G8.3/BGT-XXX	Q.PEAK DUO ML-G10.a-XXX	Q.TRON XL-G2.3/BFG XXX
	Q.PEAK DUO-BLK-G8+-XXX	Q.PEAK DUO BLK ML-G10.a-XXX	Q.TRON BLK M-G2+/AC
	Q.PEAK DUO-G8-XXX	Q.PEAK DUO XL-G10.2-XXX	Q.PEAK DUO BLK ML-G10.C+
	Q.PEAK DUO-BLK-ML-G9+-XXX	Q.PEAK DUO XL-G10.3/BFG-XXX	Q.TRON BLK M-G2.H+
	Q.PEAK DUO-ML-G9+-XXX	Q.PEAK DUO ML-G10+-XXX	Q.TRON BLK M-G2.H1+_AC
	Q.PEAK DUO-BLK-ML-G9+-XXX	Q.PEAK DUO BLK ML-G10+/t-XXX	Q.TRON BLK M-G2.F+ XXX
	Q.TRON BLK M-G2.F1+/AC XXX	Q.PEAK DUO BLK ML-G10.C1+/AC XXX	Q.TRON BLK M-G2(.F1_.H1_.C1)+ _AC XXX
	Q.TRON BLK M-G2 (.F_.H_.C)+ XXX		
Heliene	60M-XXX	108HC M10 SL-XXX	144HC-XXX-M10-SL
	60P-XXX	108HC M10 SL-XXX	144HC-XXX-M10-NTYP-SL
	72M-XXX	144HC M10 SL-XXX	156HC-XXX-M10-SL
	72P-XXX	144HC M10 SL-XXX	156HC-XXX-M10-NTYP-SL
HT-SAAE	HT60-166M-XXX	HT60-182M-XXX	
Hyundai	HiA-SXXXMS	HiS-SXXXYI	HiN-TXXXNJ
	HiS-SXXXXY	HiS-SXXXYH(BK)	HiS-TXXXNJ
	HiN-SXXXXG(BK)	HiN-TXXXNF(BK)	HiS-TXXXNJ(BK)
Hyperion / Runergy	HY-DH108P8-XXX(Y)	HY-DH144P8-XXX	HY-DH144N8-XXX
	HY-DH108N8-XXX		
Imperial Star	ISM7-SHSB108-XXX1M		
Indepwr	iPWR-M10-54X2S	iPWR-M10-60BX2S	
JA Solar	JAM60S09-XXX/PR	JAM72S10-XXX/MR	JAM54S30-XXX/MR
	JAM60S10-XXX/MR	JAM72D10-XXX/MB	JAM54S31-XXX/MR
	JAM60S10-XXX/PR	JAM72S10-XXX/PR	JAM72D30-XXX/MB
	JAM60S12-XXX/PR	JAM72S12-XXX/PR	JAM54D41-XXX/MB
	JAM72S09-XXX/PR	JAM60S17-XXX/MR	
Jinko Solar	JKMXXXM-60	JKMXXXM-72	JKMXXXM-6TL3-B
	JKMXXXM-60L	JKMXXXM-72L-V	JKMXXXM-6RL3-B
	JKMXXXM-60HL	JKMXXXP-72	JKMXXXM-7RL3-V
	JKMXXXM-60HBL	JKMXXXP-72-V	JKMXXXM-7RL3-TV
	JKMXXXP-60	JKMXXXPP-72	JKMXXXM-72HL4-V
	JKMXXXP-60-J4	JKMXXXPP-72-V	JKMXXXM-72HL4-TV
	JKMXXXP-60-V	JKMSXXXP-72	JKMXXXN-72HL4-BDV
	JKMXXXP-60B-J4	JKMXXXM-72HL-V	JKMXXXN-72HL4-BDX*
	JKMXXXPP-60	JKMXXXM-72HL-TV	JKMXXXP-60-V
	JKMXXXPP-60-V	JKMXXXM-72HBL	
KB Solar	MODULE-KBS-375-MONO	MODULE-KBS-375-MONO-BF	MODULE-KBS-450-MONO
	MODULE-KBS-450-MONO-BF		

Approved Modules

Manufacturer	Model		
LG	LGXXXN1C-A5	LGXXXS2W-G4	LGXXXQ1C-A6
	LGXXXN1K-A5	LGXXXN1C-V5	LGXXXQ1K-A6
	LGXXXQ1C-A5	LGXXXN1W-V5	LGXXXM1K-A6
	LGXXXQ1K-A5	LGXXXN2T-V5	LGXXXM1C-A6
	LGXXXS1C-A5	LGXXXN2T-J5	LGXXXA1C-A6
	LGXXXN2C-B3	LGXXXN1T-V5	LGXXXQAC-A6
	LGXXXN2W-B3	LGXXXA1C-V5	LGXXXQAK-A6
	LGXXXN1C-G4	LGXXXM1C-L5	LGXXXN1K-B6
	LGXXXN1K-G4	LGXXXM1K-L5	LGXXXN2W-E6
	LGXXXS1C-G4	LGXXXN1C-N5	LGXXXN2T-E6
	LGXXXN2C-G4	LGXXXN1K-L5	LGXXXN1K-E6
	LGXXXN2K-G4	LGXXXN1K-A6	LGXXXN3K-V6
	LGXXXN2W-G4	LGXXXN1C-A6	
	LGXXXS2C-G4	LGXXXN1W-A6	
Longi	LR6-60-XXXM	LR6-60HPB-XXXM	LR6-60HIH-XXXM
	LR6-60BK-XXXM	LR6-60HPH-XXXM	LR6-60HIB-XXXM
	LR6-60HV-XXXM	LR4-60HPB-XXXM	LR4-72HPH-XXXM
	LR6-60PB-XXXM	LR4-60HIB-XXXM	LR5-72HPB-XXXM
	LR6-60PE-XXXM	LR4-60HPH-XXXM	LR5-54HABB-XXXM
	LR6-60PH-XXXM	LR4-60HIH-XXXM	LR8-54HGBB-XXX
Maxeon	SPR-MAX3-XXX-BLK-R		
Meyer Burger	Meyer Burger Black*	Meyer Burger White*	
mSolar	TXI6-XXX120BB	TXI10-XXX108BB	
Mitrex	MXXX-I3H		
Mission Solar	MSEXXXSO5T	MSEXXXSQ6S	MSEXXXSX6W
	MSEXXXSO5K	MSEXXXSQ4S	MSEXXXSX5R
	MSEXXXSQ5T	MSEXXXSR8K	MSE410HT0B
	MSEXXXSQ5K	MSEXXXSR8T	MSI10-XXXHT4G
	MSEXXXMM4J	MSEXXXSR9S	MSI10-XXXHN4G
	MSEXXXMM6J	MSE60AXXX	MSX10-XXXHN0B
	MSEXXXSO6W	MSEXXXSX5K	
	MSEXXXSO4J	MSEXXXSX5T	
	MSEXXXSO6J	MSEXXXSX6S	
Next Energy Alliance	USNEA-XXXM3-60	USNEA-XXXM3-72	
	USNEA-XXXM3B-60	USNEA-XXXM3B-72	
Optivolt	OPT10MXXXB	OPT10MXXXW	
Panasonic	VBHNXXXKA03	VBHN325SA17E	EVPVXXXH
	VBHNXXXKA04	VBHXXXRA18N	EVPVXXXPK
	VBHNXXXSA17	VBHXXXRA03K	EVPVXXXHK
	VBHNXXXSA18	EVPVXXX(K)	EVPVXXXHK2

Approved Modules

Manufacturer	Model		
Philadelphia Solar	PS-M144(HCBF)-XXXW	PS-M108(HCBF)-XXXW	PS-M108(HC)-XXXW
Phono Solar	PSXXXM-20/U	PSXXXM8GFH-24/TH	PSXXXM6-24/TH
	PSXXXMH-20/U	PSXXXM8GF-18/VH	
	PSXXXM8GF-24/TH	PSXXXM8GFH-18/VH	
REC (All may be followed by "BLK" or "BLACK")	RECXXXTP2	RECXXXTP2M 72 BLK2	RECXXXTP4
	RECXXXTP2-BLK	RECXXXTP2SM 72	RECXXXAA Pure
	RECXXXNP	RECXXXTP2SM 72 BLK	RECXXXAA Pure-R
	RECXXXTP2M	RECXXXTP2SM 72 BLK2	RECXXXNP2
	RECXXXTP2M 72	RECXXXAA	RECXXXNP3
	RECXXXTP2M 72 BLK	RECXXXTP3M	RECXXXAA Pro M
	RECXXXAlpha Pro M	RECXXXAA Pure-RX-DC	
SEG Solar	SEG-400-BMB-HV	SEG-xxx-BMD-HV	SEG-xxx-BTD-BG
	SEG-400-BMB-TB	SEG-xxx-BMD-TB	
Seraphim	SRP-XXX-BMD-HV	SRP-XXX-BTD-BG	
Silfab	SLAXXX-M	SLGXXX-P	SILXXXNX
	SLAXXX-P	SSGXXX-M	SILXXXHN
	SSAXXX-M	SSGXXX-P	SILXXXBG
	SSAXXX-P	SILXXXNT	SILXXXHM
	SILXXXBL	SILXXXHL	SIL-XXXHC+
	SILXXXML	SILXXXBK	SILXXXQD
	SILXXXNL	SILXXXHC	SIL-XXXHM
	SLGXXX-M	SILXXXNU	SILXXXQM
	SILXXX XM		
Sirius PV USA	ELNSM54M-HC-XXX	ELNSM54M-HC-N-XXX	
Solar4America	S4AXXX60H5BB	S4AXXX72H5BB	S4AXXX-108MH10
	S4AXXX60H5BW	S4AXXX72H5BW	S4AXXX-144MH10
	S4AXXX60M5BB	S4AXXX72M5BB	
	S4AXXX60M5BW	S4AXXX72M5BW	
Solaria	Solaria PowerXT-XXXR-PX	Solaria PowerXT-XXXR-AC	Solaria PowerXT-XXXR-PM-AC
	Solaria PowerXT-XXXR-BX	Solaria PowerXT-XXXR-PM	
Sunpower	SPR-AXXX-G-AC	SPR-AXXX-BLK	SPR-MXXX-BLK-H-AC
	SPR-AXXX	SPR-MXXX-H-AC	SPR-MXXX-BLK
	SPR-AXXX-BLK-G-AC	SPR-MXXX	SPR-MAX3-XXX-BLK-R
SunSpark	SST-XXXM3-60	SST-XXXM3-72	
	SST-XXXM3B-60	SST-XXXM3B-72	
Talesun	TP660M-XXX	TP672M-XXX	TP7G54M(H)-XXX
	TP660P-XXX	TP672P-XXX	
Tesla	TSP-XXX		

Approved Modules

Manufacturer	Model		
Thornova	TS-BB54(XXX)	TS-BG54(XXX)	TS-BG72(XXX)
	TS-BB60(XXX)	TS-BG60(XXX)	
Trina	TSM-XXXDD05(II)	TSM-XXXPD05.08	TSM-XXXDEG15VC.20(II)
	TSM-XXXDD05A.05(II)	TSM-XXXPD05.082	TSM-XXXDEG18MC.20(II)
	TSM-XXXDD05A.08(II)	TSM-XXXPD05.08D	TSM-XXXDEG19C.20
	TSM-XXXDD05A.082(II)	TSM-XXXPD05.08S	TSM-XXXDEG21C.20
	TSM-XXXPA05	TSMXXXDD05H.05(II)	TSM-XXXDE09C.05
	TSM-XXXPA05.05	TSM-XXXDD06M.05(II)	TSM-XXXDE09C.07
	TSM-XXXPA05.08	TSM-XXXDE15H(II)	TSM-XXXNE09RC.05
	TSM-XXXPD05	TSM-XXXDE15M(II)	TSM-XXXNE09RH.05
	TSM-XXXPD05.002	TSMXXXDE06X.05(II)	TSM-XXXNE19RC
	TSM-XXXPD05.05	TSMXXXDE09.05	TSM-xxxNEG9RH.25
	TSM-XXXPD05.05S	TSM-XXXDE15V(II)	
Ureco	FBMxxxMFG-BB	FAMxxxE7G-BB	
Vikram Solar	SOMERA VSMHBB.60.XXX.05	PREXOS VSMDHT.60.XXX.05	
	SOMERA VSMH.72.XXX.05	PREXOS VSMDHT.72.XXX.05	
VSUN	VSUNXXX-144BMH-DG	VSUNXXX-108BMH	VSUNXXXN-108BMH-DG-BB
	VSUNXXX-120BMH	VSUNXXX-132BMH	
ZNShine	ZXM6-60-XXX/M	ZXM6-NH144-XXXM	ZXM7-SHLDD144-XXXM
	ZXM6-NH120-XXXM	ZXM7-SH108-XXXM	

Approved MLPE Devices

SnapNrack Omega has been tested with the following Module Level Power Electronic (MLPE) devices:

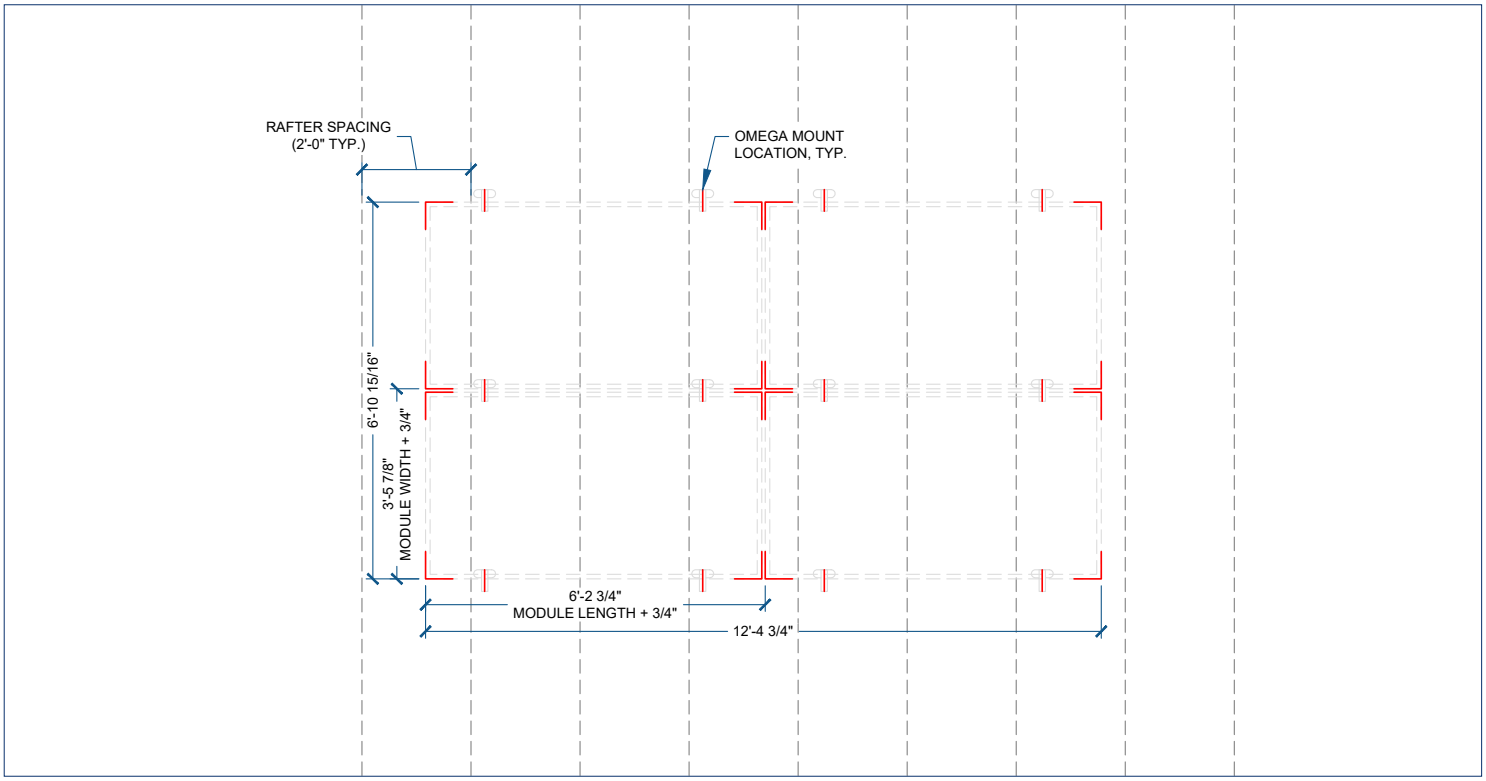
SnapNrack TopSpeed Universal mounting systems has been tested with the following UL/NRTL Listed Module Level Power Electronic (MLPE) Devices. The back plates of the MLPEs have been evaluated for bonding to TopSpeed Universal through the SnapNrack MLPE Frame Attachment Kit, model 242-02151.

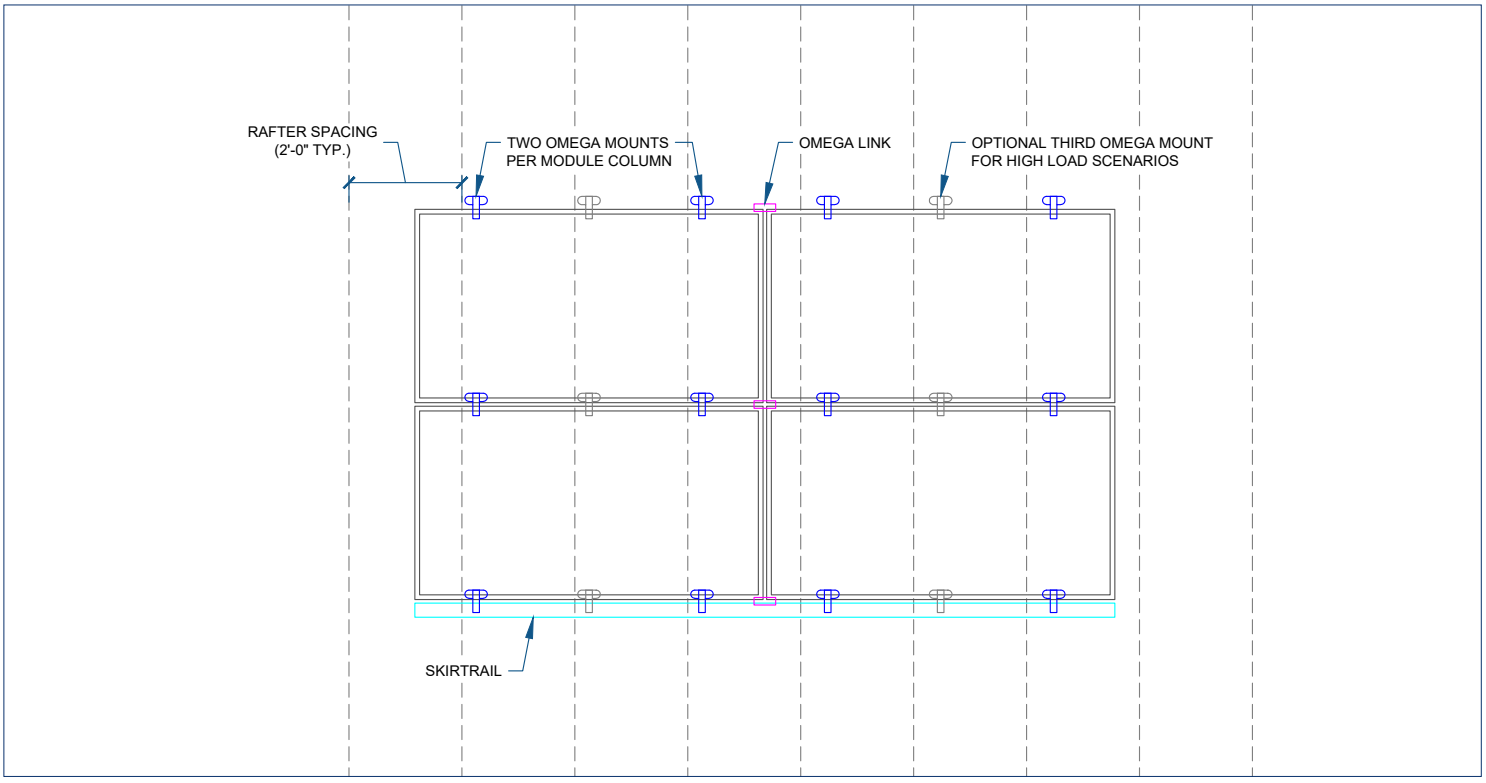
Manufacturer	Model	
AP Smart	RSD-S-PLC	
Celestica International	DG-006-F001201x	DG-006-F001401x
Delta Electronics	GPI00010105	
Enphase	C250	IQ8PLUS-72
	M215	IQ8A-72
	M250	IQ8H-208-72
	IQ6-60-2-US	IQ8H-240-72
	IQ6PLUS-72-2-US	IQ8HC-72-M-US
	IQ7-60-2-US	IQ8HC-72-M-DOM-US
	IQ7-60-B-US	IQ8MC-72-M-US
	IQ7PLUS-72-2-US	IQ8X-80-M-US
	IQ7PLUS-72-B-US	IQ8X-80-M-DOM-US
	IQ8-60	
Generac	S2502	
Ginlong Technologies	Solis-RSD-1G	
	Solis-MLRSD-R1-1G	Solis-MLRSD-R2-1G
SolarEdge	P300-5NC4ARS	P320-5NC4ARS
	P370-5NC4AFS	P400-5NC4AFS
	P320	P340
	P370	P400
	P401	P405
	P485	P505
	P730	P800p
	P850	P860
	P950	P1100
	P1101	S440
	S500	
SMA	RSB-2S-US-10	
Tigo	TS4-R-F	TS4-R-M
	TS4-R-O	TS4-R-S
	TS4-R-M-DUO	TS4-R-O-DUO
	TS4-R-S-DUO	TS4-A-F
	TS4-A-2F	TS4-A-O
	TS4-A-S	

Layout Examples

Module-First Mounting (MFM)

- Standard landscape 2×2 array

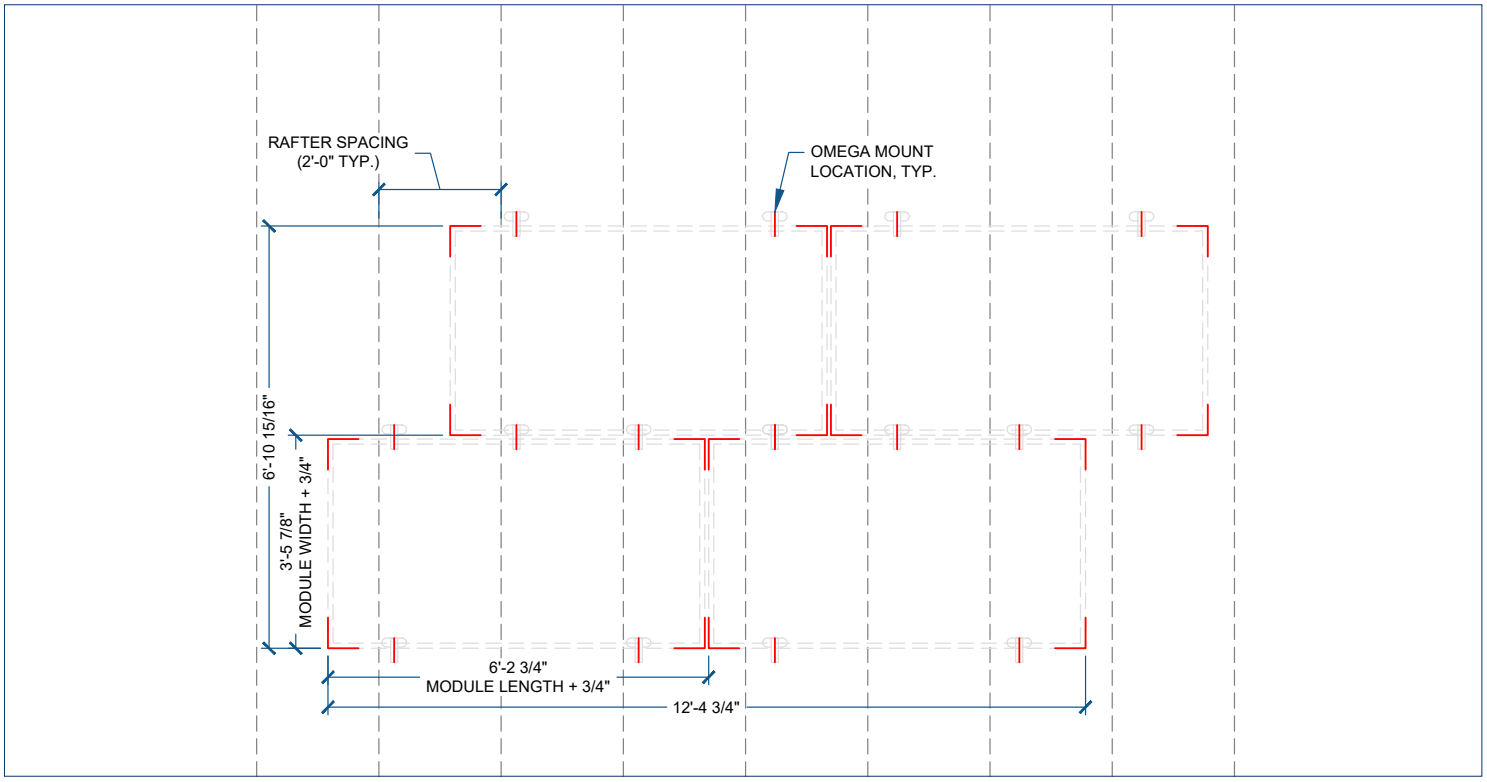


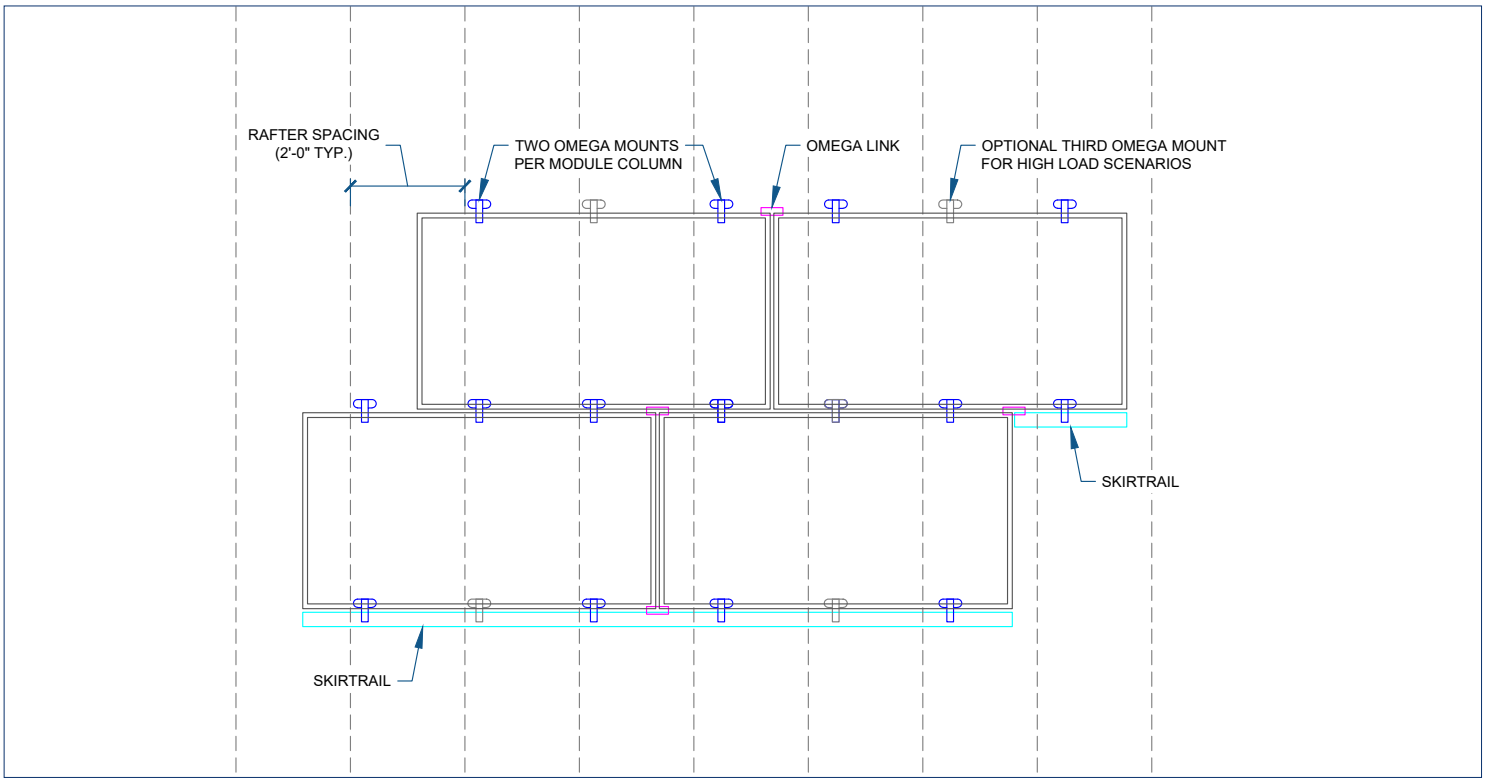


Layout Examples

Module-First Mounting (MFM)

- Staggered landscape 2×2 array

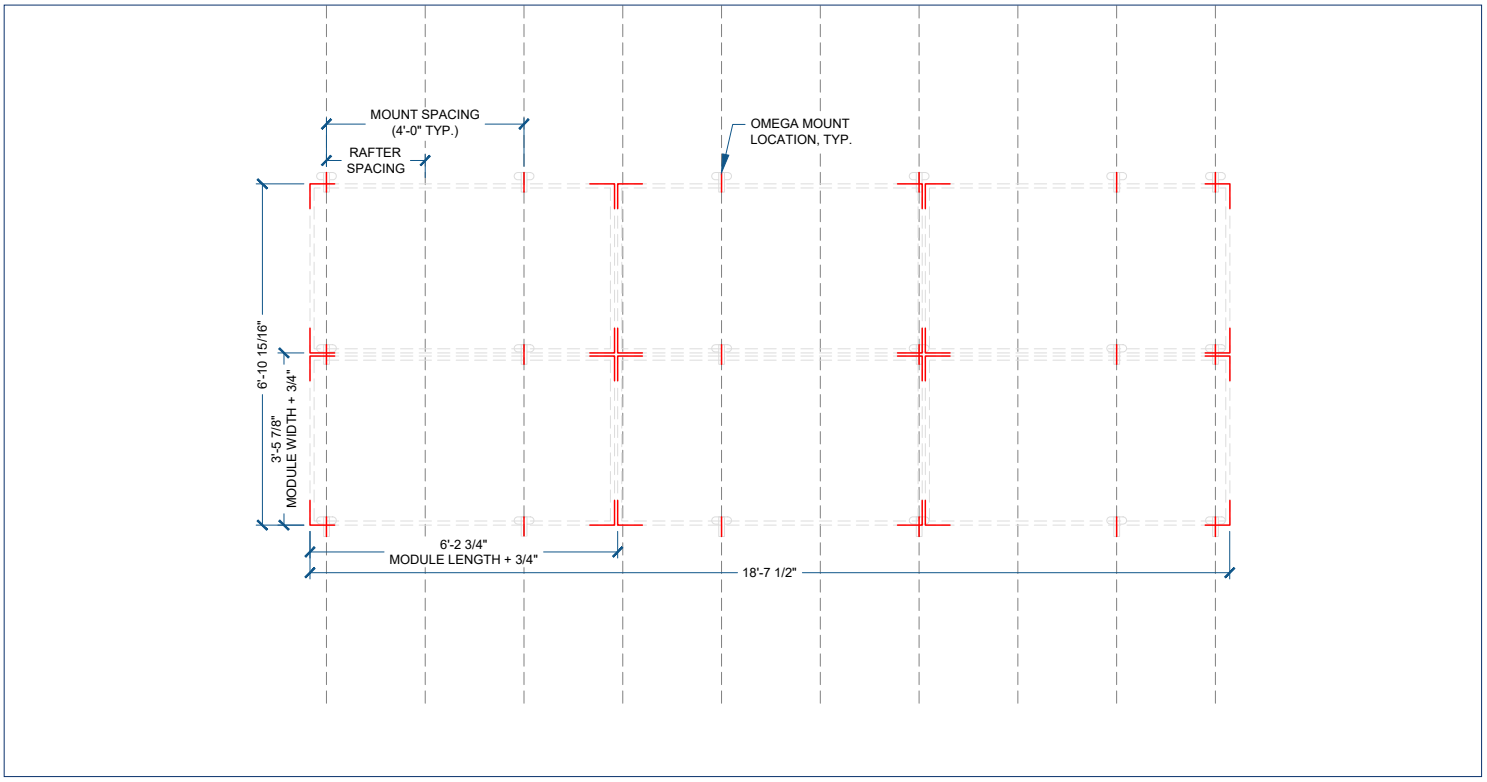


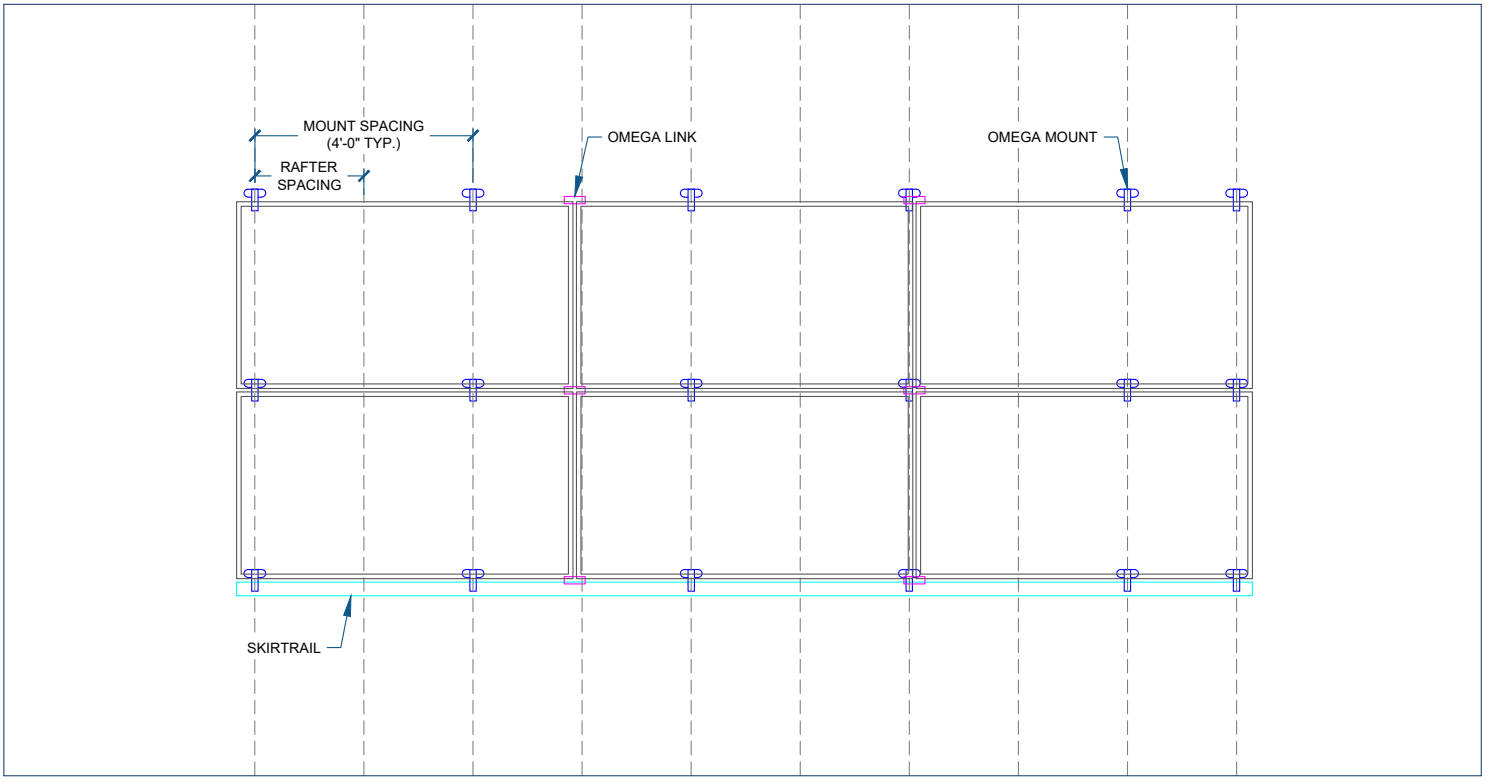


Layout Examples

Roof-First Mounting (RFM)

- Standard landscape 3×2 array, rafter-mounted

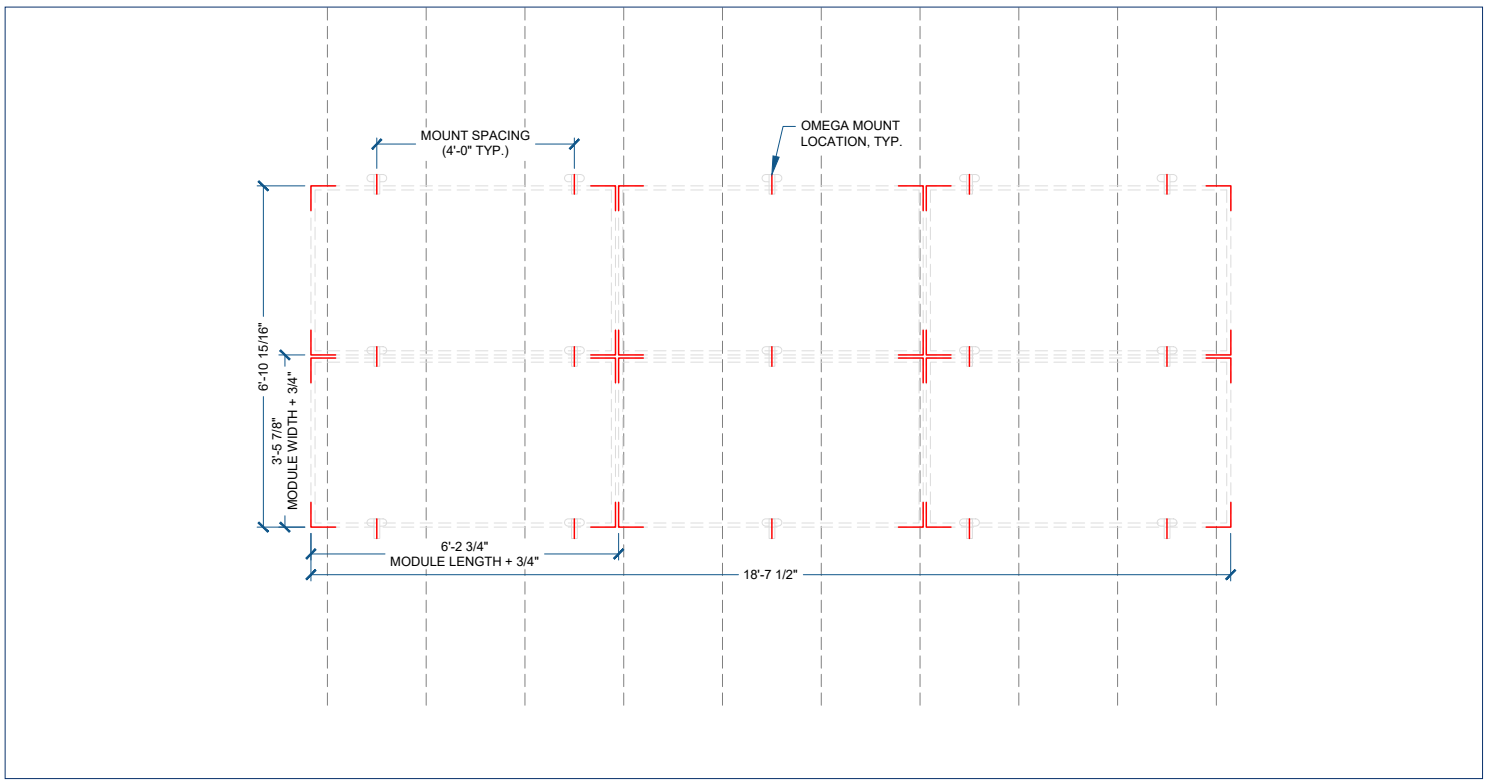


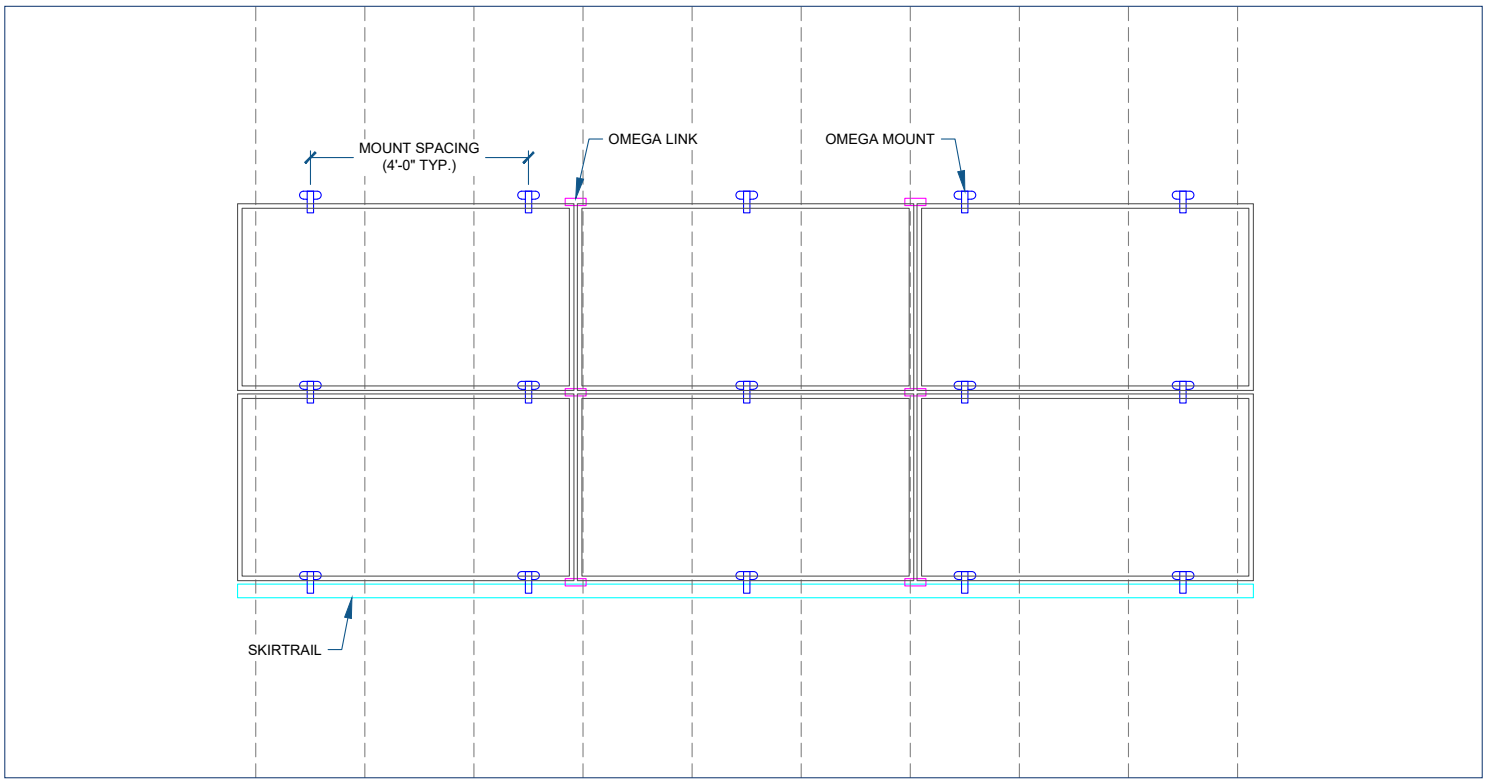


Layout Examples

Roof-First Mounting (RFM)

- Standard landscape 3×2 array, deck-mounted

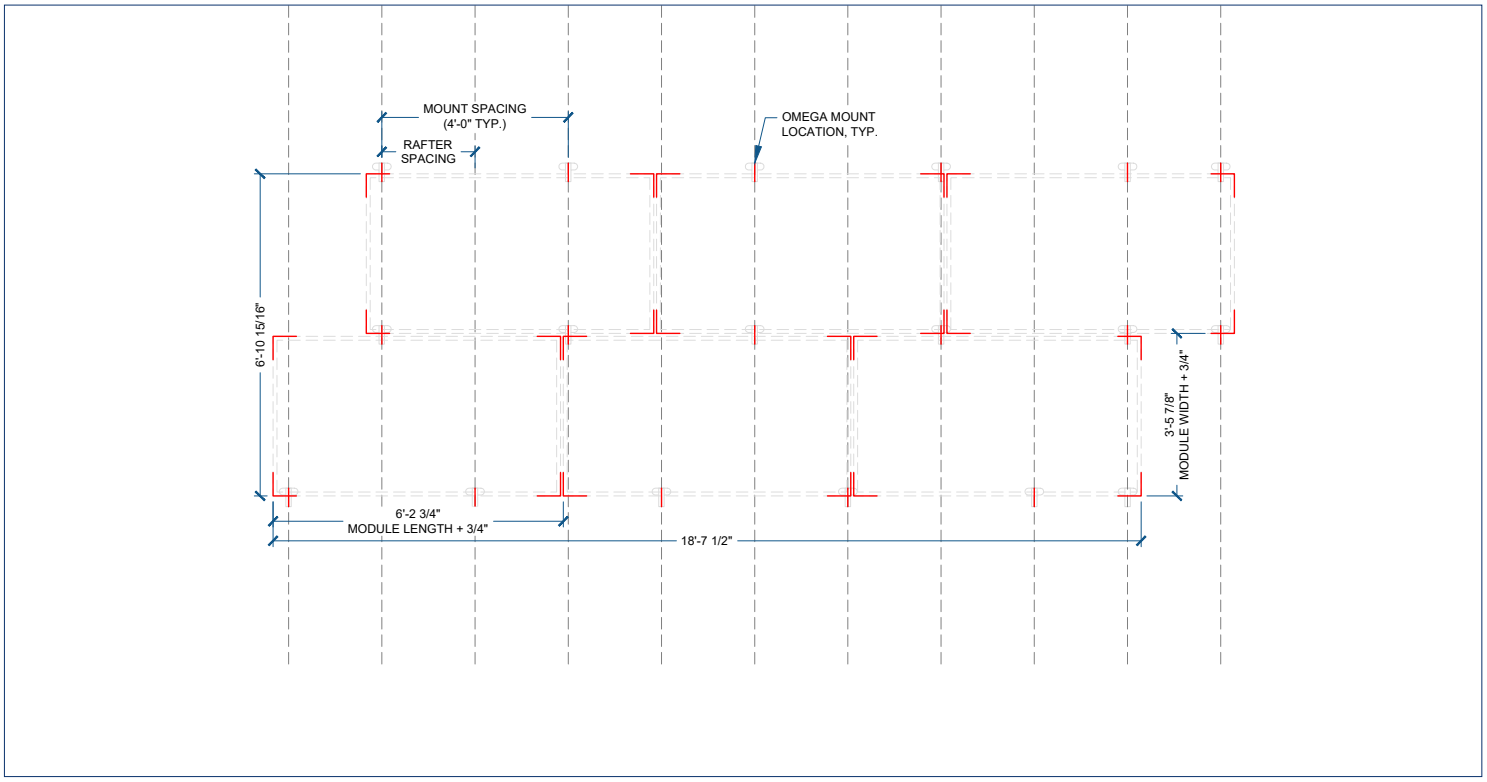


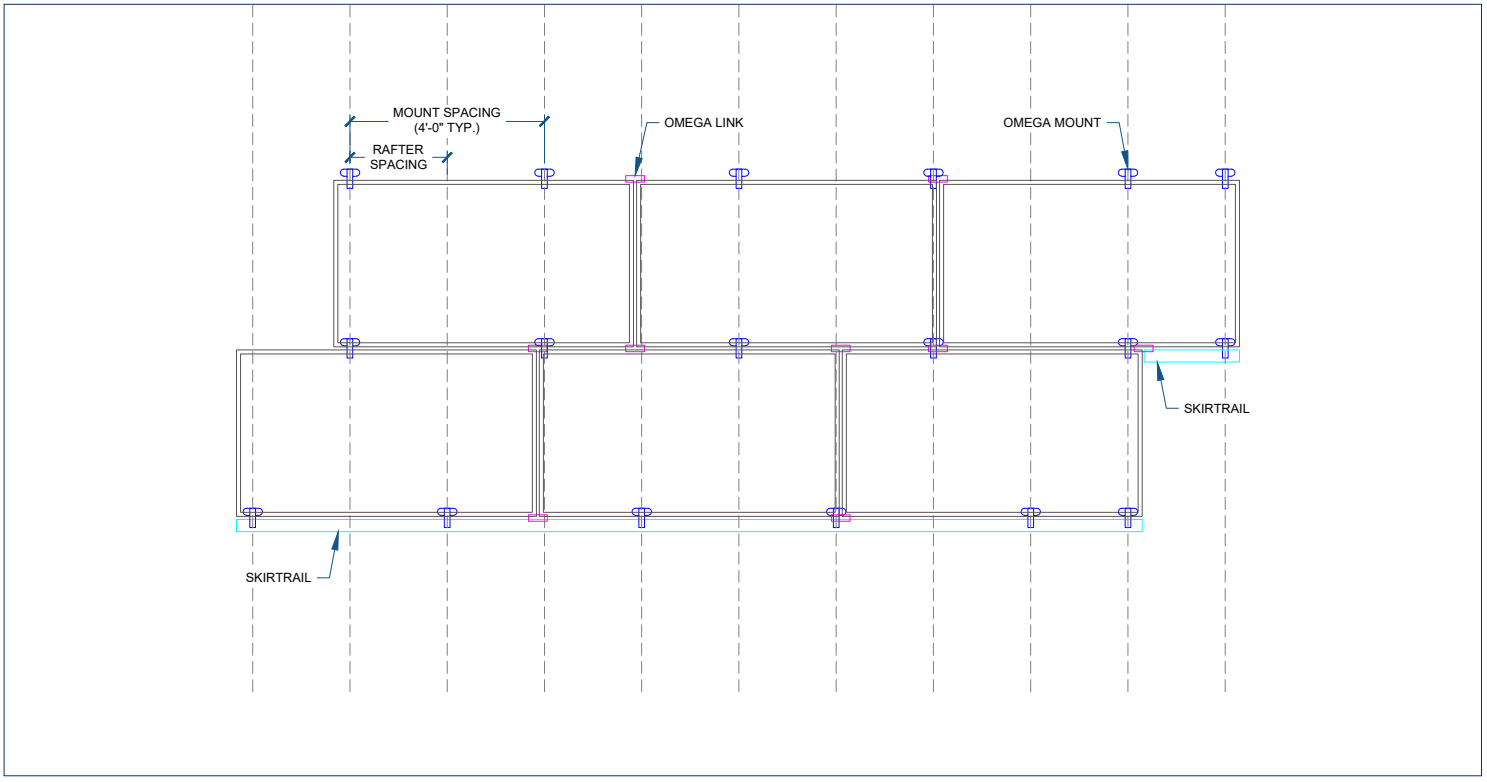


Layout Examples

Roof-First Mounting (RFM)

- Staggered landscape 3×2 array, rafter-mounted

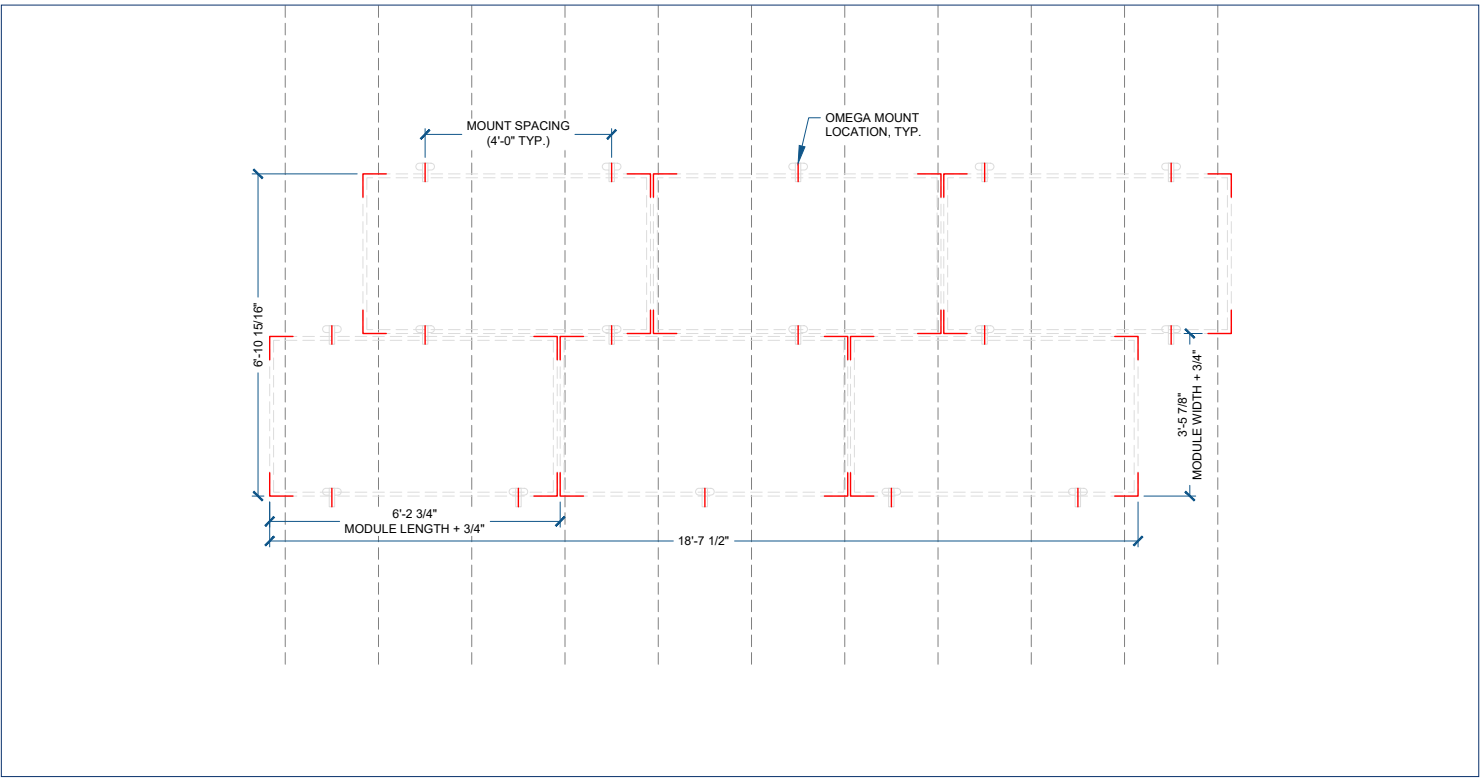


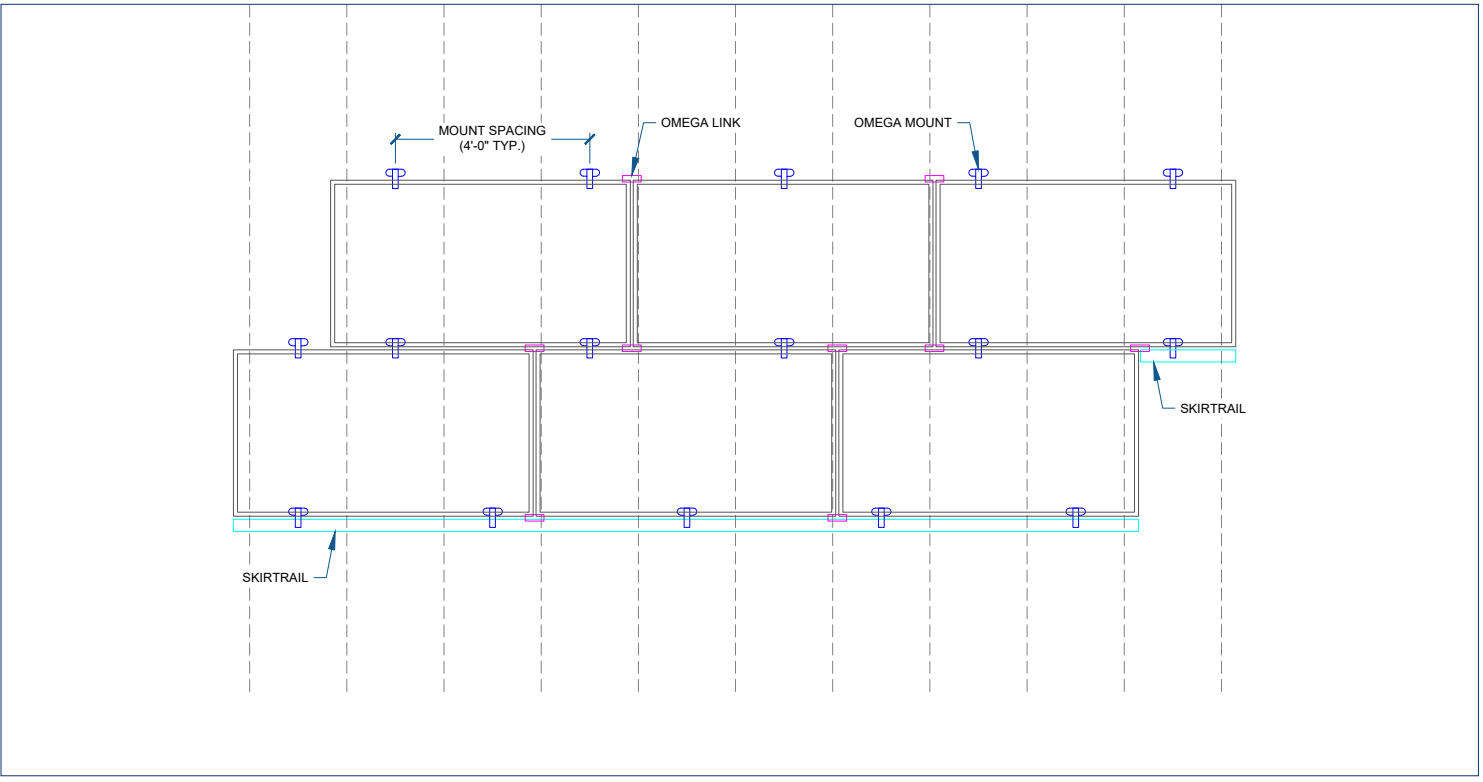


Layout Examples

Roof-First Mounting (RFM)

- Staggered landscape 3×2 array, deck-mounted

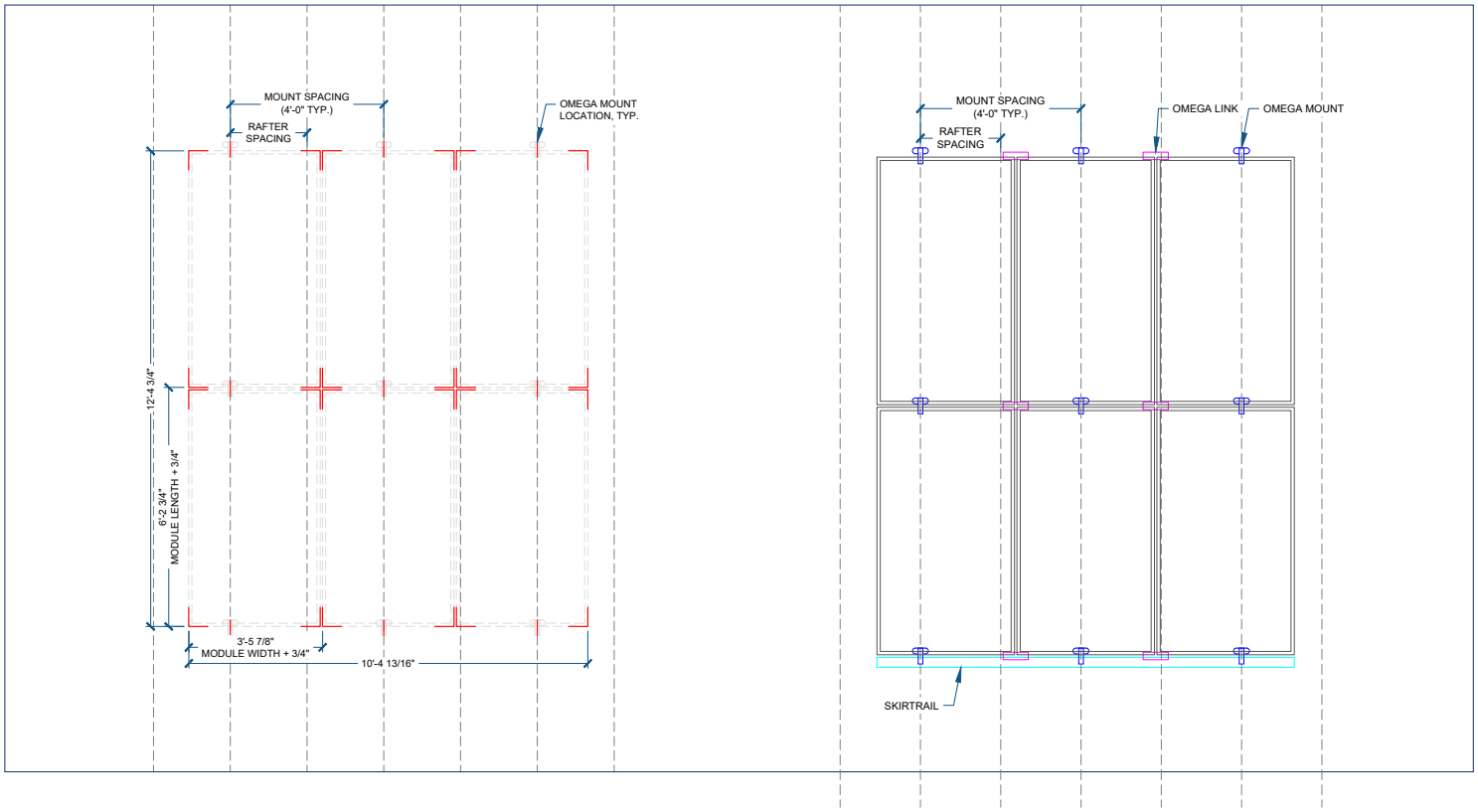




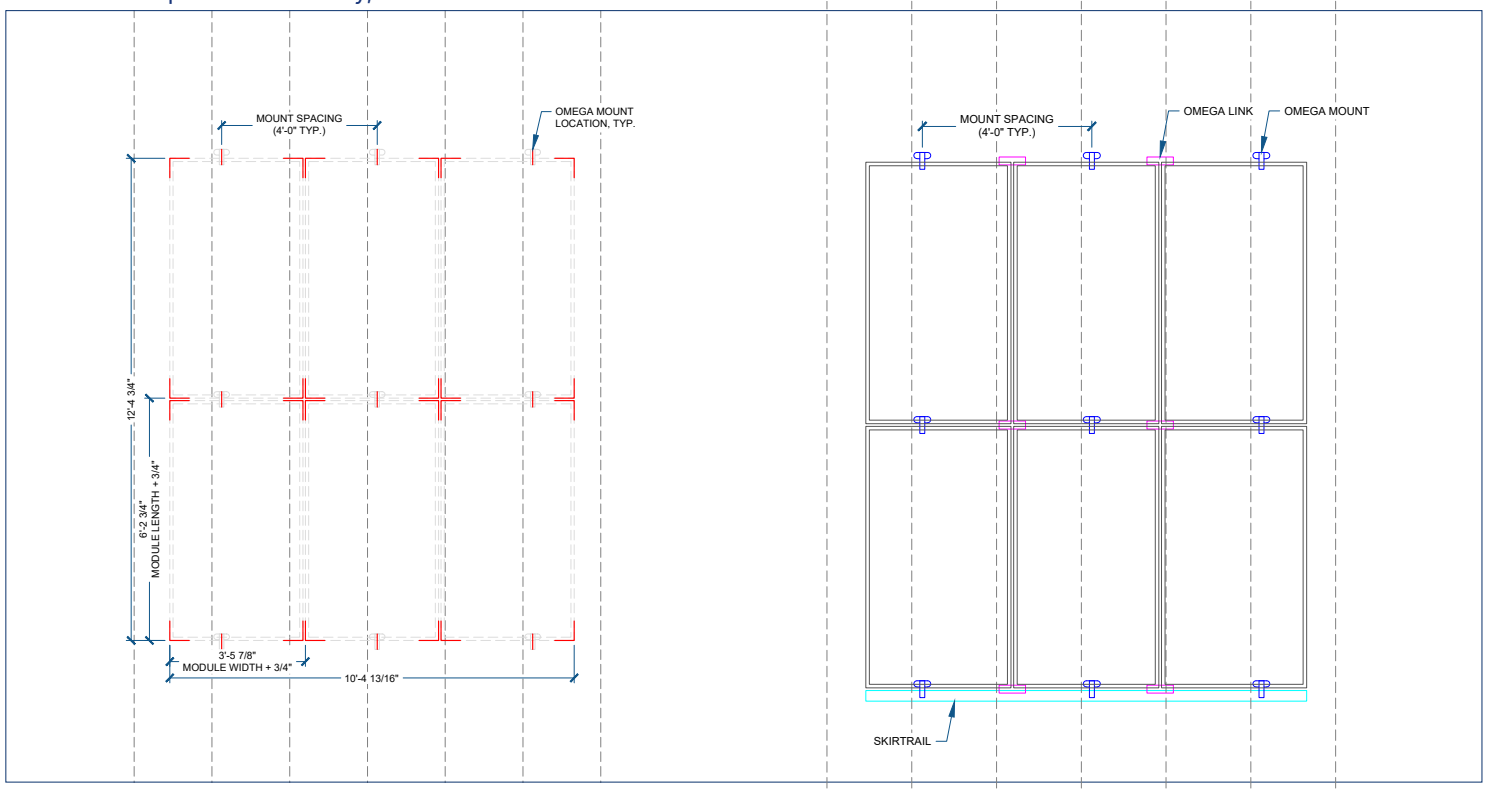
Layout Examples

Roof-First Mounting (RFM)

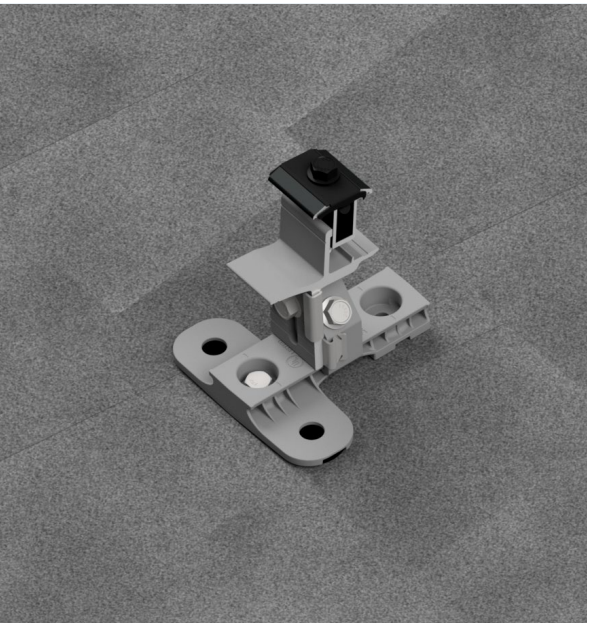
- Standard portrait 2×3 array, rafter-mounted



- Standard portrait 2×3 array, deck-mounted



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