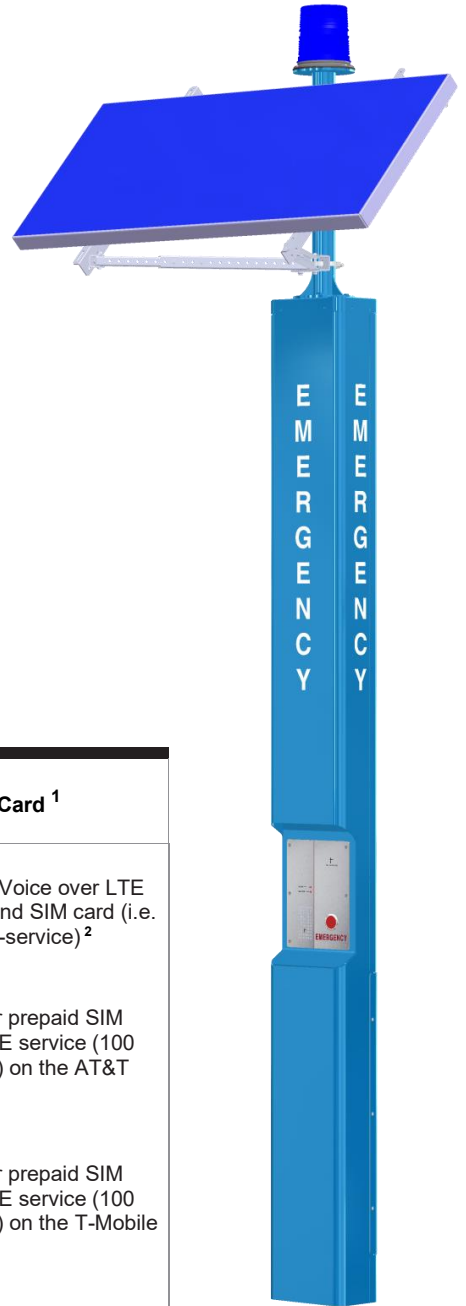


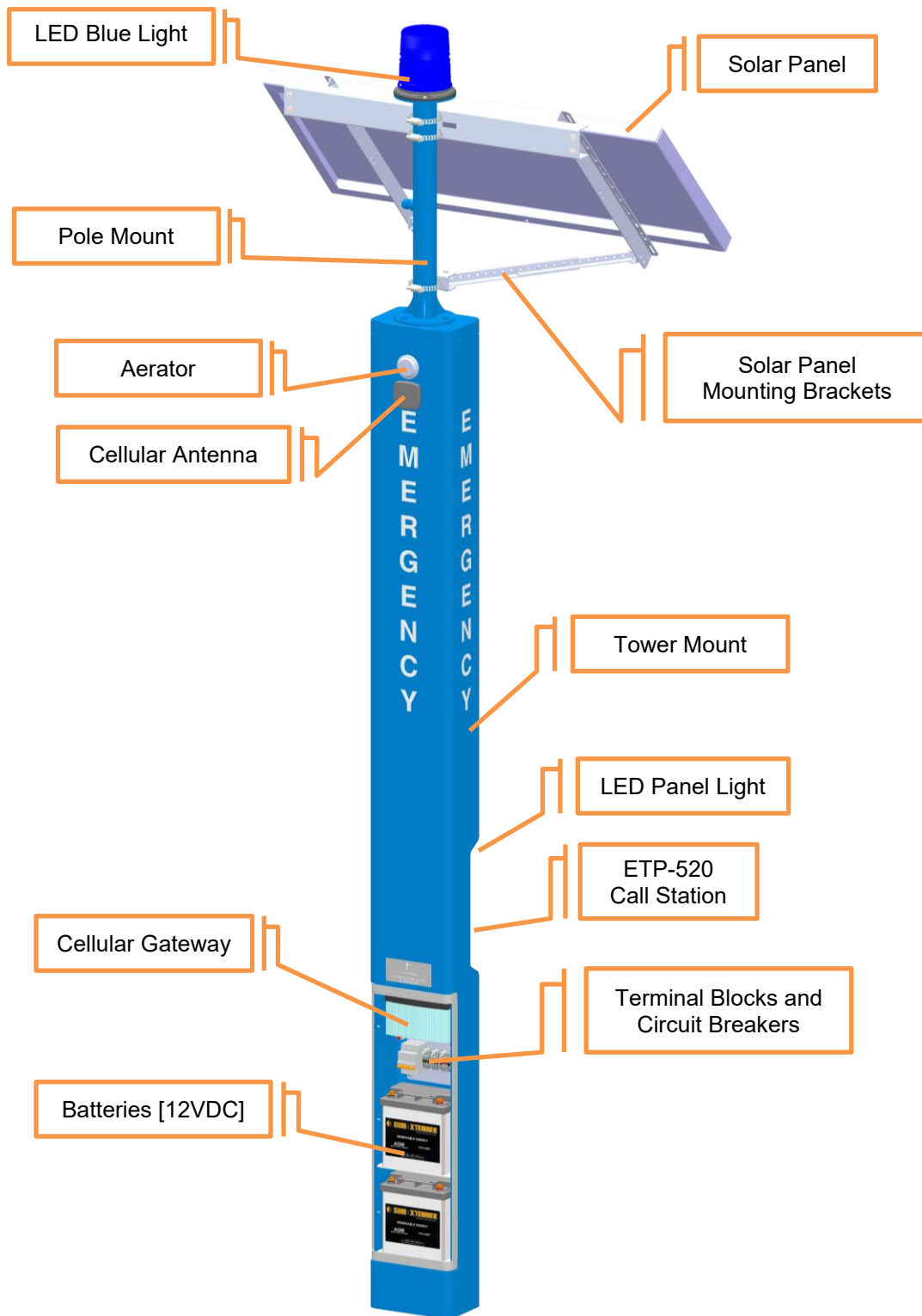
# Wireless Blue Light Phone Tower Version 2 BLPT-SOLAR Series

## Installation Guide



### Model Number(s)

Model Series	Tower Color	Geographic Region (see map)	ETP-520 Series Call Station Configuration	SIM Card <sup>1</sup>
BLPT-SOLAR	[Leave Blank] "Safety Blue" tower finish	<b>-L</b> For installations in the areas marked in gray	<b>-E520E</b> Red push button labeled EMERGENCY	<b>-NSV2</b> Do not include Voice over LTE (VoLTE) plan and SIM card (i.e. bring-your-own-service) <sup>2</sup>
	<b>-RD</b> "Safety Red" tower finish	<b>-U</b> For installations in the areas marked in red	<b>-E520C</b> Red push button labeled CALL	<b>-ATTV2</b> Includes 2-year prepaid SIM card with VoLTE service (100 minutes/month) on the AT&T network <sup>1</sup>
			<b>-E520EI</b> Red push button labeled EMERGENCY and black push button labeled INFO	<b>-TMOV2</b> Includes 2-year prepaid SIM card with VoLTE service (100 minutes/month) on the T-Mobile network <sup>1</sup>
			<b>-E520ECK</b> Red push button labeled EMERGENCY and black push button labeled CALL with keypad	



**Overview of Components for the BLPT-SOLAR Series Tower**

## Table of Contents

I.	Introduction .....	4
II.	Tower Mount Installation.....	4
III.	Solar Panel Installation .....	5
IV.	Mechanical Installation .....	12
V.	Electrical Installation .....	14



**THIS PRODUCT MUST BE INSTALLED IN ACCORDANCE WITH THE APPLICABLE INSTALLATION CODE BY A PERSON FAMILIAR WITH THE CONSTRUCTION AND OPERATION OF THE PRODUCT AND THE HAZARDS INVOLVED**

**CE PRODUIT DOIT ÊTRE INSTALLÉ SELON LE CODE D'INSTALLATION PERTINENT, PAR UNE PERSONNE QUI CONNAÎT BIEN LE PRODUIT ET SON FONCTIONNEMENT AINSI QUE LES RISQUES INHÉRENTS**

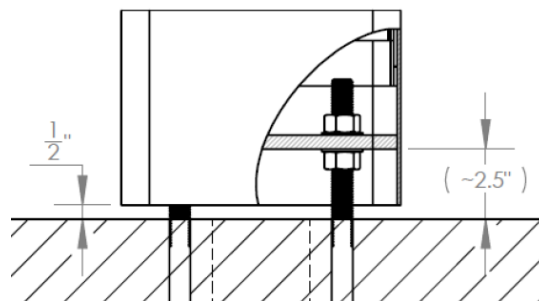
## I. Introduction

This guide is for the installation of the **BLPT-SOLAR Series Tower**.

For instructions on installing the anchor bolts into the foundation, securing with an air gap, and standing up the tower, see the **Guidelines for Installation – ETP-MTE**.

## II. Tower Mount Installation

1. Remove the bottom access panel attached to the tower mount by unfastening the tamper-resistant screws.
2. Install one 3/4" nut and one washer on each anchor bolt 2.5-3.5" above grade to top of washer. This will allow for a **1/2" air gap** between the foundation and the tower, which will allow airflow and prevent moisture problems. Verify that the nuts are level (0° pitch). See **Figure 1**.



**Figure 1.** Tower Mount Installation with air gap

3. Install the tower onto the bolts with the call station opening oriented in the direction desired. Install the second set of nuts and washers. Tighten the upper nuts; the bottom set is only for leveling.

**III. Solar Panel Installation**

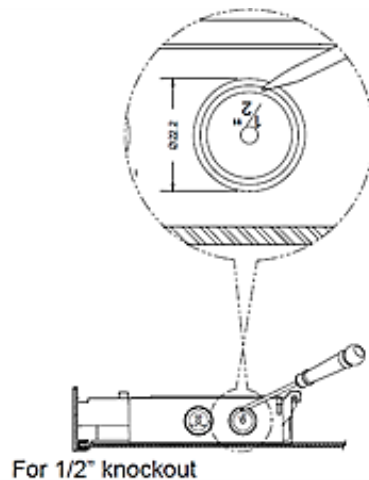


**IMPORTANT NOTE:**

The following is a basic overview of the solar panel and mounting bracket installation.

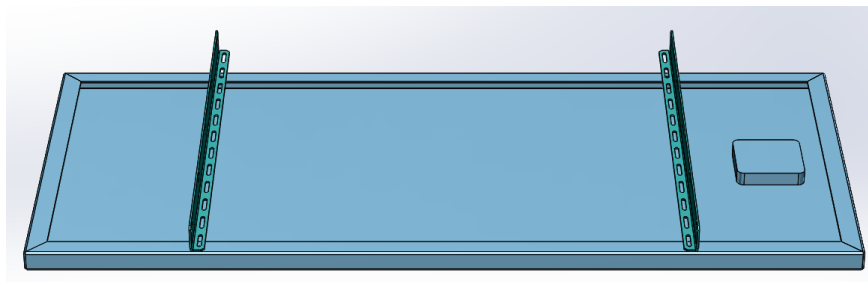
A detailed component list and instructions can be found in the mounting bracket installation manual accompanying the kit.

1. Lay the solar panel face down on a protected flat surface.
2. Use a small flat screwdriver to remove the 1/2" knock out as shown in **Figure 2**.



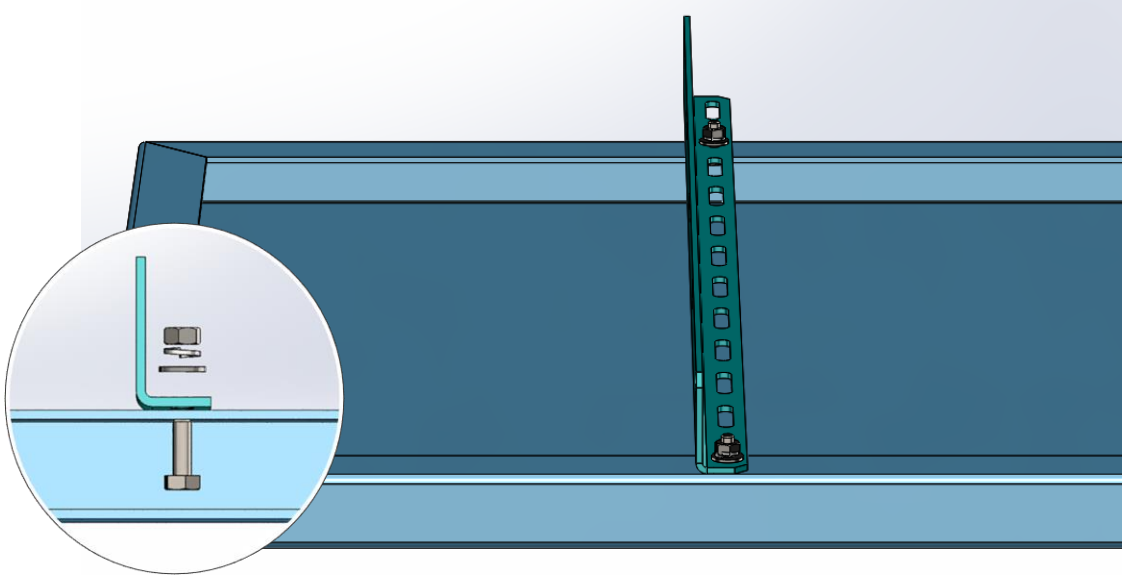
**Figure 2.** Remove 1/2" knockout

3. Place the 1/2" black sealing washer over the liquid tight cord grip. Then pass the threads through the 1/2" knockout and secure with the black nylon locknut.
4. Place the rails on the back of the panel so the lip of the rail containing the solar panel mounting slot/holes is facing the center of the solar panel as shown in **Figure 3**. Align one end of the rails to be approximately flush with the bottom edge of the solar panel.



**Figure 3.** Mounting rails placed on rear surface of solar panel

5. Secure the mounting rails with a 1/4 - 20 x 3/4" bolt, flat washer, lock washer, and hex nut in each of the solar panel mounting holes (four (4) on each module) as shown in **Figure 4**. Tighten the bolts to **7 ft-lbs**.



**Figure 4.** Mounting rail fastened to the solar panel frame

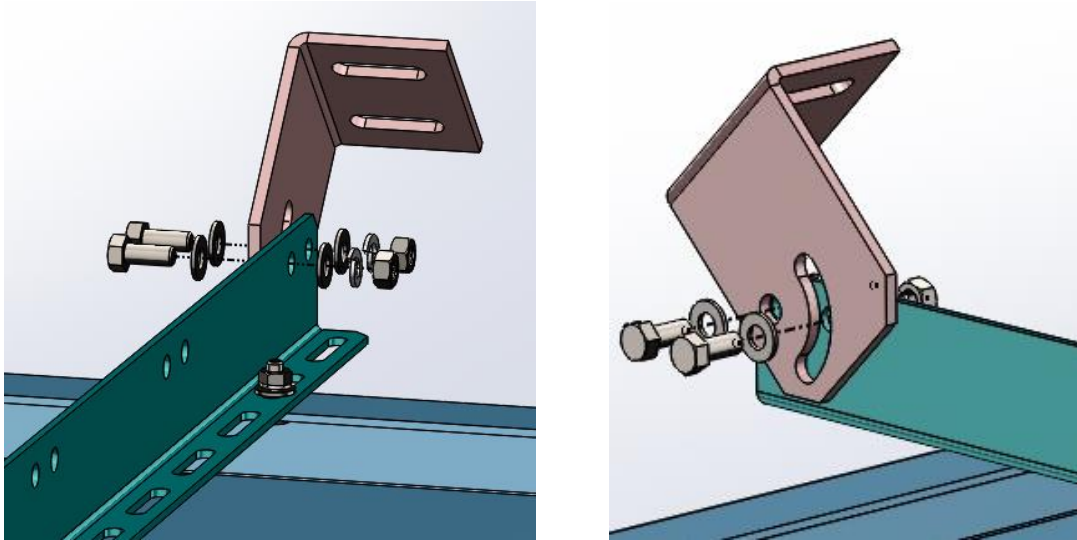
6. Attach the clips to the rails so that the flanged end containing the slots on the clips are facing the center of the module as shown in **Figure 5**.



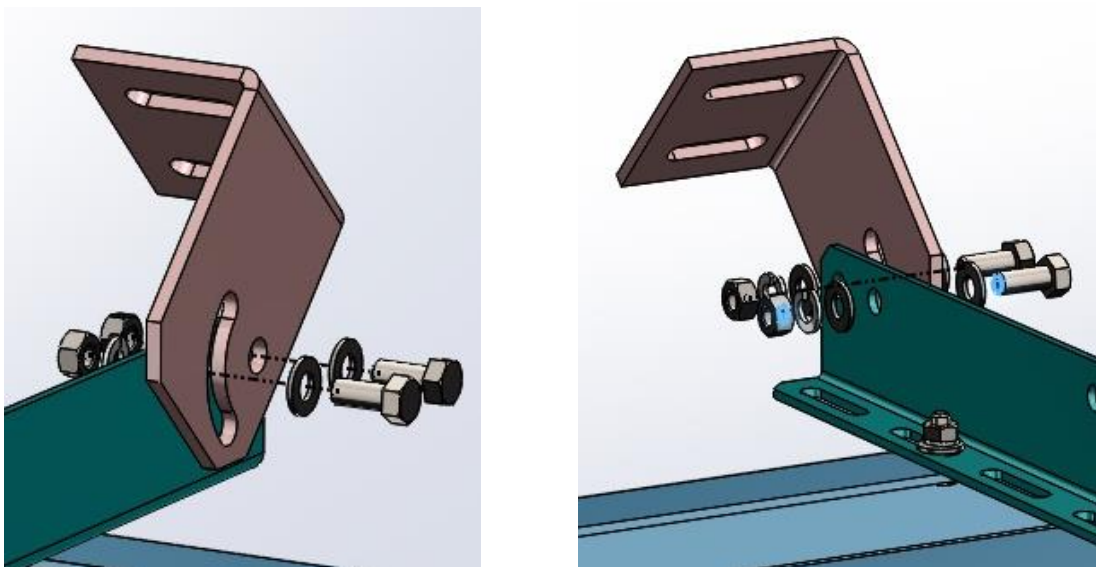
**Figure 5.** Orientation and position of clips relative to the solar panel

- Attach the clips to the rails. In each of the mounting holes, use a 5/16 - 18 x 3/4" bolt and flat washer on one side and a flat washer, lock washer and nut on the other as shown in **Figures 6 and 7**.

Apply a drop of threadlocker to each bolt and tighten the bolts to hold in place securely.



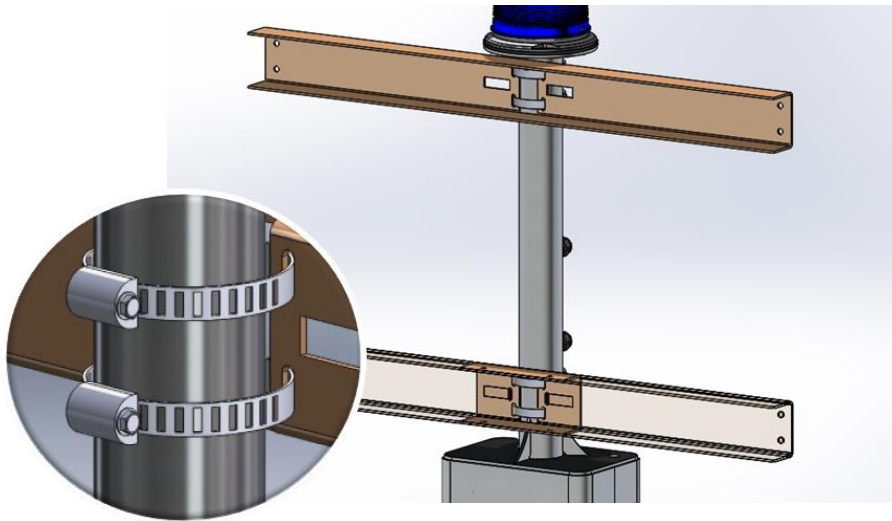
**Figure 6.** Exploded view of left clip attached to the left mounting rail



**Figure 7.** Exploded view of right clip attached to the right mounting rail

- To install the bucket brackets, thread each hose clamp through one of the sets of narrow center holes as shown in **Figure 8**.

Place the buckets at the desired location on the pole approximately 18 inches apart. The spacing can be adjusted later. Tighten the hose clamp screws to **70 in-lbs**.

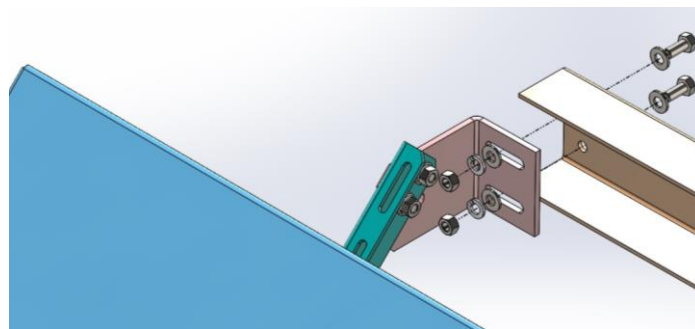


**Figure 8.** Mounting buckets attached to the pole using hose clamps



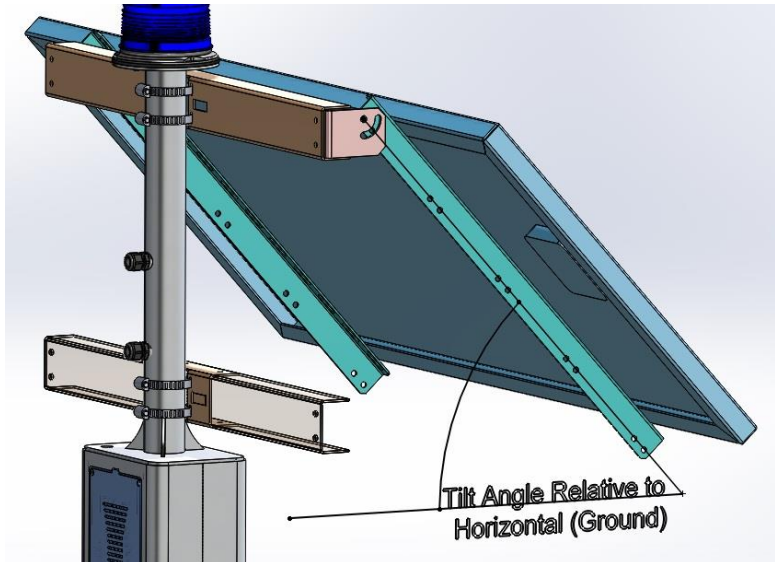
**For countries in the northern hemisphere (U.S.A., Canada, Mexico) all solar panels should be installed facing south.**

- Place the solar panel assembly so the slots on the clips line up with holes inside the bucket as shown in **Figure 9**. Bolt the clips to the bucket using 5/16 - 18 x 3/4" hex cap bolt and flat washer on one side, and a washer, lock washer and nut on the other. Apply a drop of threadlocker to each bolt and tighten the bolts to **12 ft-lbs**.



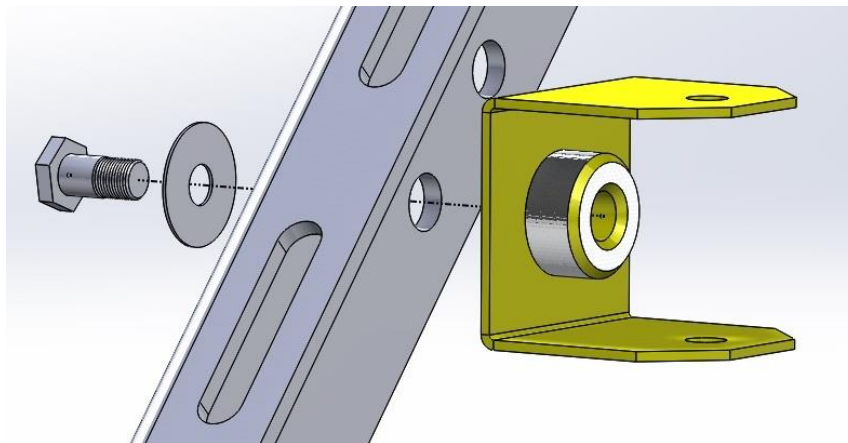
**Figure 9.** Exploded view of the right-side clip installed to the upper bucket bracket

10. Refer to Appendix A for correct tilt angle according to geographic location. To adjust the tilt angle, loosen the bolts holding the mounting rails to the clips and adjust the tilt of the panel as shown in Figure 10. Re-tighten the bolts to **12 ft-lbs**.



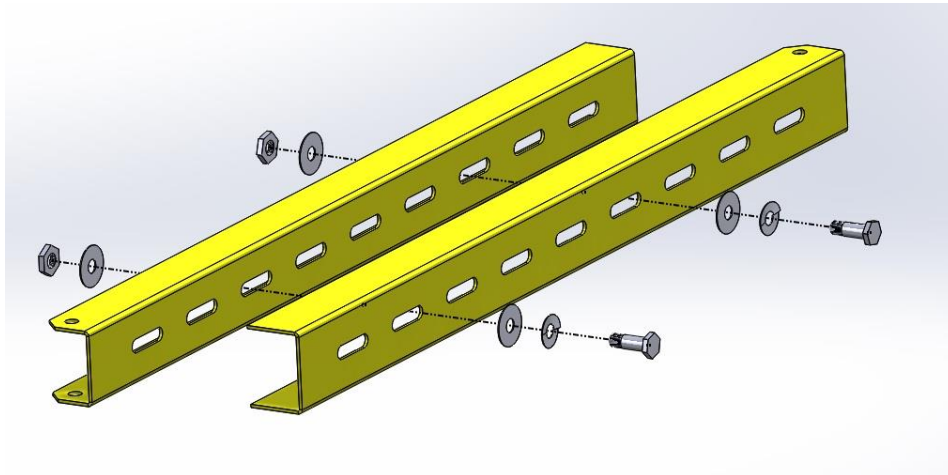
**Figure 10.** Panel tilt angle reference

11. Attach the C-brackets to the inside face of the mounting rails using a 1/4-20 x 3/4" hex bolt and washer through one of the center holes as shown in Figure 11. Tighten the bolt securely so that the C-bracket flanges are level and with the flanges of the lower bucket bracket.



**Figure 11.** Exploded view of C-bracket installation inside of mounting rail

12. To assemble the support rails, fit the smaller inner channel inside the larger outer channel so that the mounting holes on the flanges are opposite one another. Slide the channels to obtain the correct length determined by the panel tilt angle. Secure the support rails together at the desired length using a drop of threadlocker, a 1/4-20 x 3/4" hex bolt, lock washer, and flat washer on one side, and a flat washer and hex nut on the other side (2 per rail assembly) as shown in **Figure 12**.



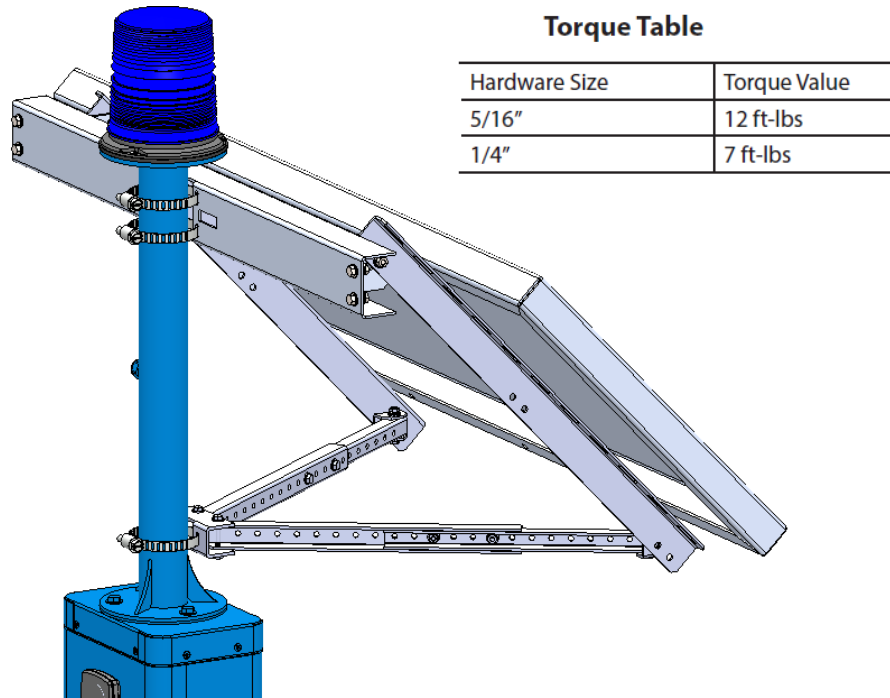
**Figure 12.** Support rail assembly

13. Use the assembled support rail to adjoin the mounting rails and the lower bucket bracket using a bolt, washers, and hex nut as shown in **Figure 13**. Mount the support rail assembly to the C-brackets using 1/4-20 x 1-5/8" hex bolt and to the lower bucket bracket using a 1/4-20 x 2" hex bolt. Apply a drop of threadlocker to each bolt, tighten bolts to **7 ft-lbs**.



**Figure 13.** Secure support rails to panel mounting rail and lower bucket bracket

14. Once all adjustments are complete, ensure that all hardware is adequately tightened to specifications listed in **Figure 14**.

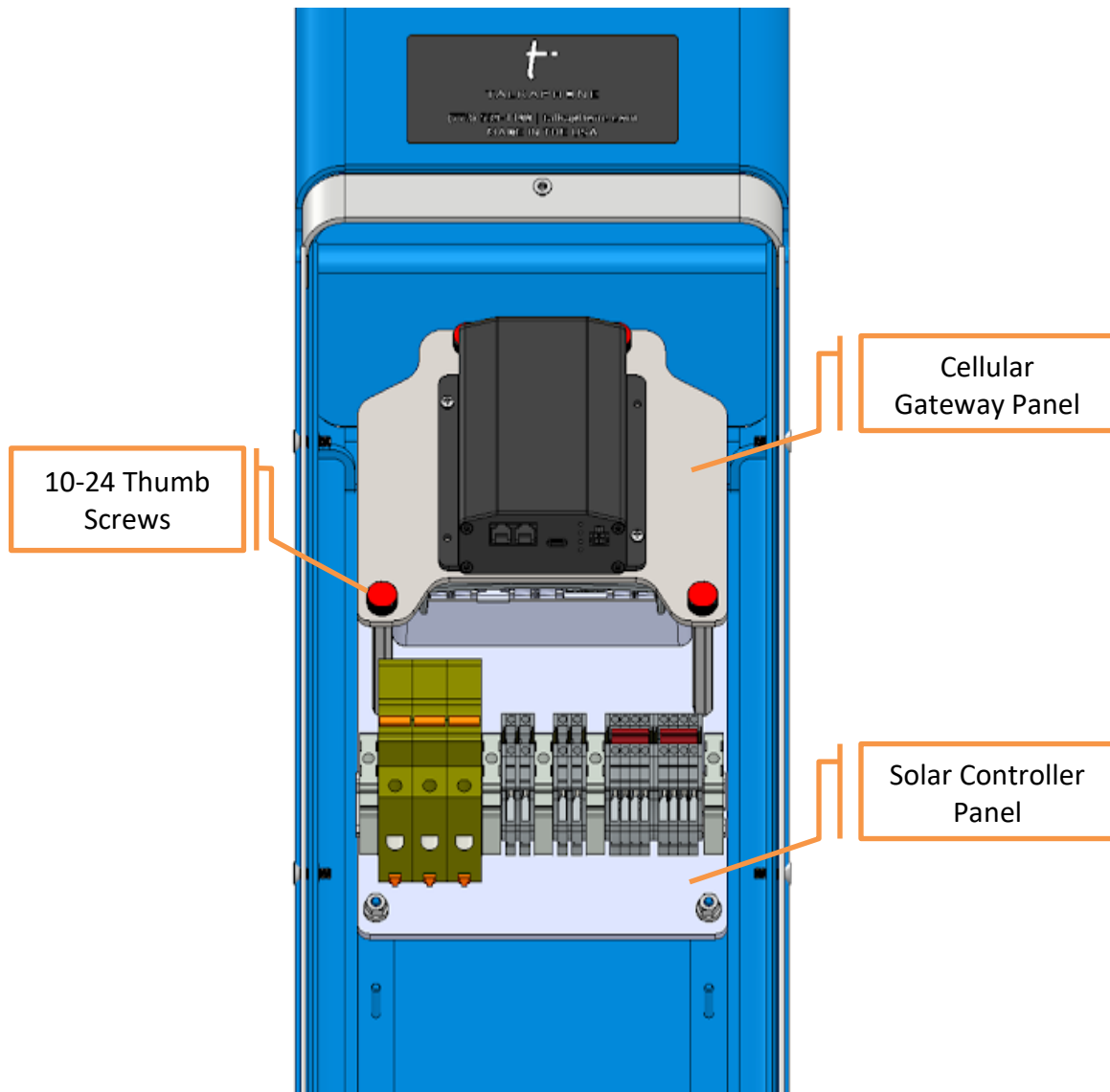


**Figure 14.** Assembled view of the solar panel and mounting brackets

#### **IV. General Installation**

1. Install the LED Panel Light above the phone opening. Tighten down using the enclosed 6-32 hex-nuts.
2. Align the pole base to the center hole on top of the cap plate with a gasket in between. Rotate the pole along the vertical axis to minimize the cable travel distance from the Solar panel junction box and cord grip on the pole. Fasten the pole to the cap plate using the hex bolts and nylon washers on the outer end and a washer and nyloc hex nut on the inside.
3. Install the LED Blue Light on top of the pole mount base plate and feed the power cord and control / trigger wires through the pole mount all the way to the bottom of the tower. Fasten the LED Blue Light to the base plate with three (3) 10-24 tamper-resistant screws provided.
4. Run the power cable for the solar panel through the liquid tight cord grip on the side of the pole. Feed the power cable through the tower mount all the way to the bottom of the tower.
5. Install the MIMO LTE antenna to the rear surface of the tower just below the cap plate by removing the hole plug.
6. Fasten the cap plate with the solar panel mounted to the pole to the tower mount.
7. In the lower section of the tower remove the top mounting panel by unfastening the four (4) #10-24 hex nuts. You may discard this panel.

- Uninstall the Cellular Gateway Panel from the Solar Controller Panel by unfastening the four (4) #10-24 thumb screws (see **Figure 15**).
- Install the Solar Controller Panel in place on to the four (4) mounting studs on to the tower as shown in **Figure 15** (assembled) using the four (4) #10-24 thumb nuts provided.

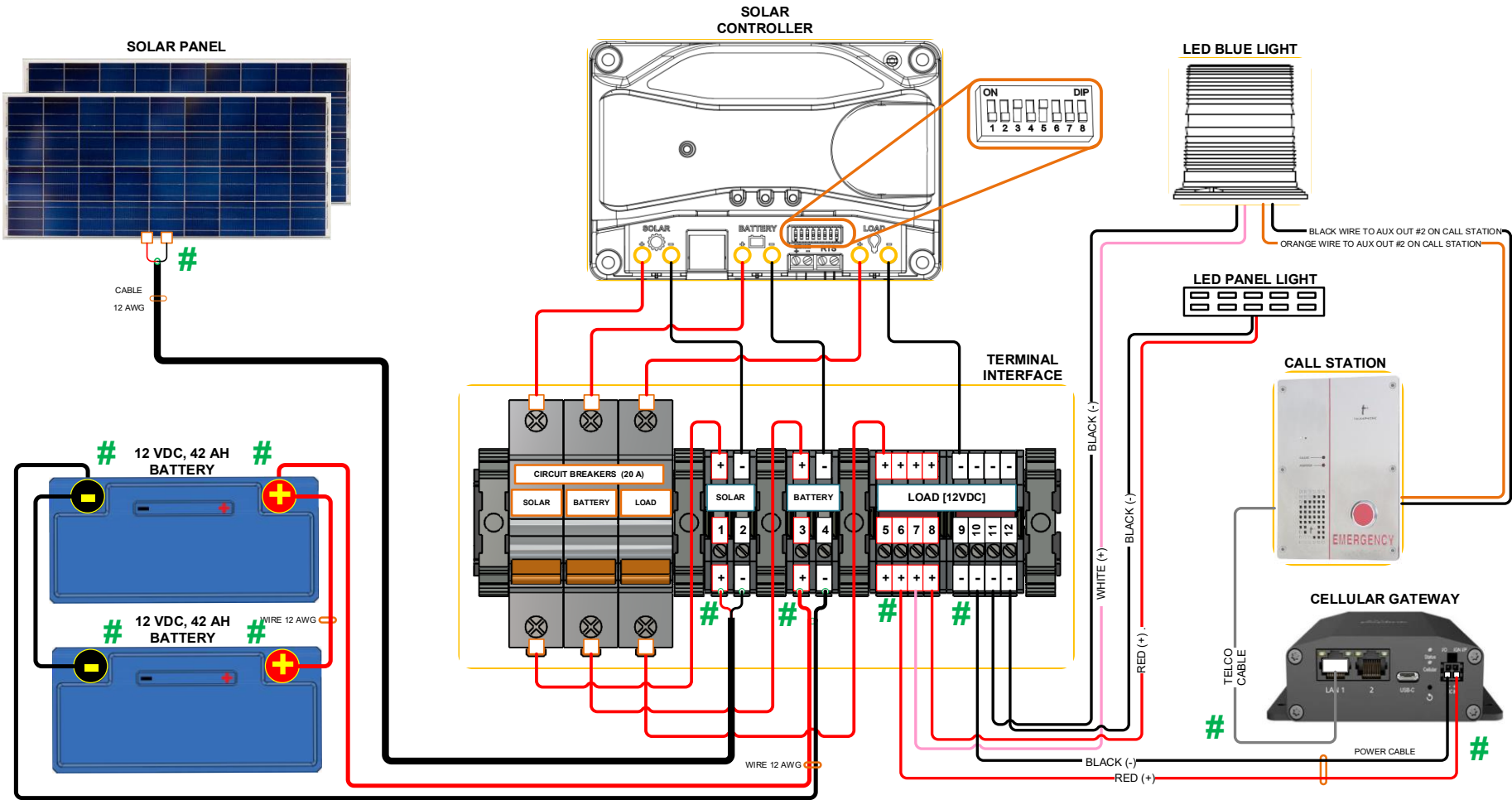


**Figure 15.** Installation of the Solar Controller Panel to the tower mount

**V. Electrical Installation**

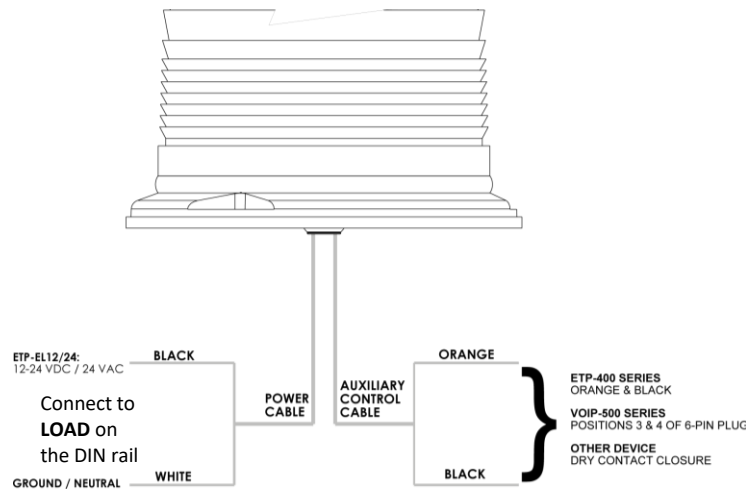
1. For an overview of electrical connections, refer to the wiring schematic diagram as shown in **Figure 16**.

[# This connection will need to be completed in the field]



**Figure 16. Solar system wiring schematic diagram**

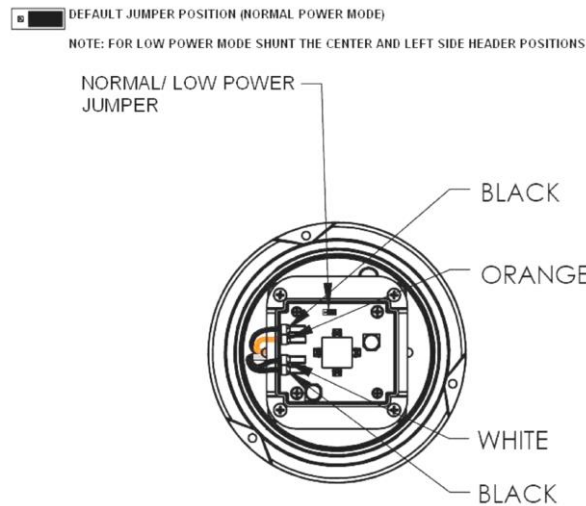
1. Connect the solar panel's power cable to the DIN rail **Terminal Block #1 [Solar (+)]** and **#2 [Solar (-)]**.
2. Connect preassembled battery cables to DIN rail **Terminal Block #3 [Battery (+)]** and **#4 [Battery (-)]**.
3. Connect the LED Blue Light power cable to DIN rail **Terminal Block #7 [Load (+)]** and **#11 [Load (-)]**.



**Figure 17.** Electrical connections to the LED Blue Light (12VDC)



**NOTE: TOWER PTS SOLAR** is shipped with 12VDC Series LED Blue Light in Low Power Mode instead of default power mode as shown in **Figure 18**.  
**For solar applications, the LED Blue Light must be jumpered to operate in low power mode.**



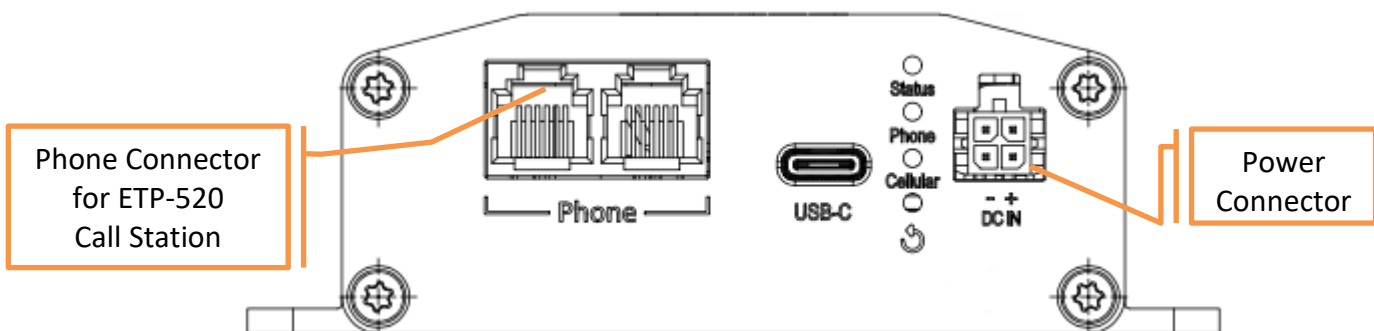
**Figure 18.** Normal / low power mode jumper inside LED Blue Light

4. Connect the **LED Panel Light power cable** to DIN rail **Terminal Block #8 [Load (+)] and #12 [Load (-)]**.
5. Connect the **Cellular Gateway power cable** to DIN rail **Terminal Block #6 [Load (+)] and #10 [Load (-)]**.
6. Install the **Cellular Gateway** on to the cellular gateway panel using the provided mounting fasteners (see **Figure 21**).
7. Connect the provided power cable (from terminals #6 and #10) to the power port on the Cellular Gateway (see **Figure 20**).
8. Connect the RJ11 cable from the ETP-520 Call Station to the left **Phone** port on the Cellular Gateway (see **Figure 20 and Figure 16**).
9. Untighten the screw of the cover for the SIM slot on the Cellular Gateway.

Insert the nano-SIM (4FF) card into the Cellular Gateway and make other necessary connections (see **Figure 19**).



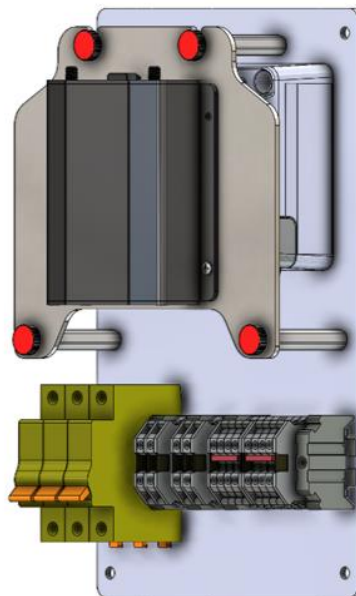
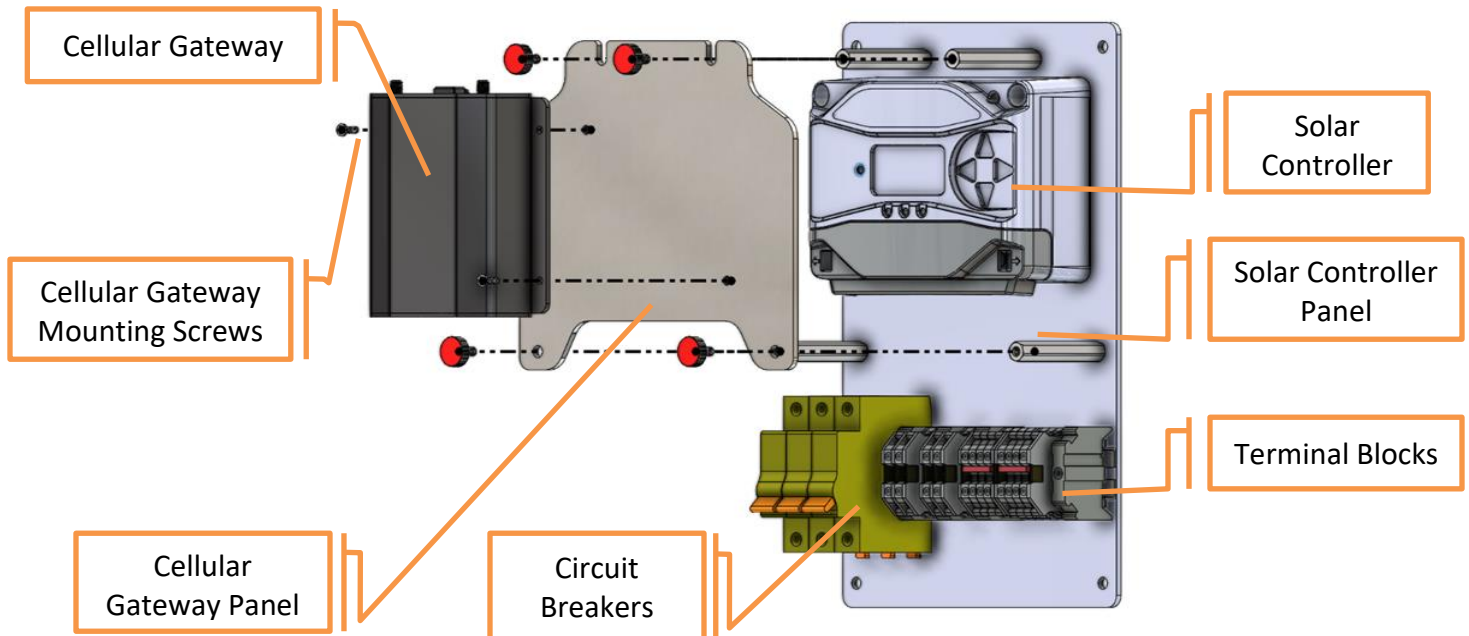
**Figure 19.** Nano-SIM card (4FF) Installation into the Cellular Gateway



**Figure 20.** Connector layout on the Cellular Gateway

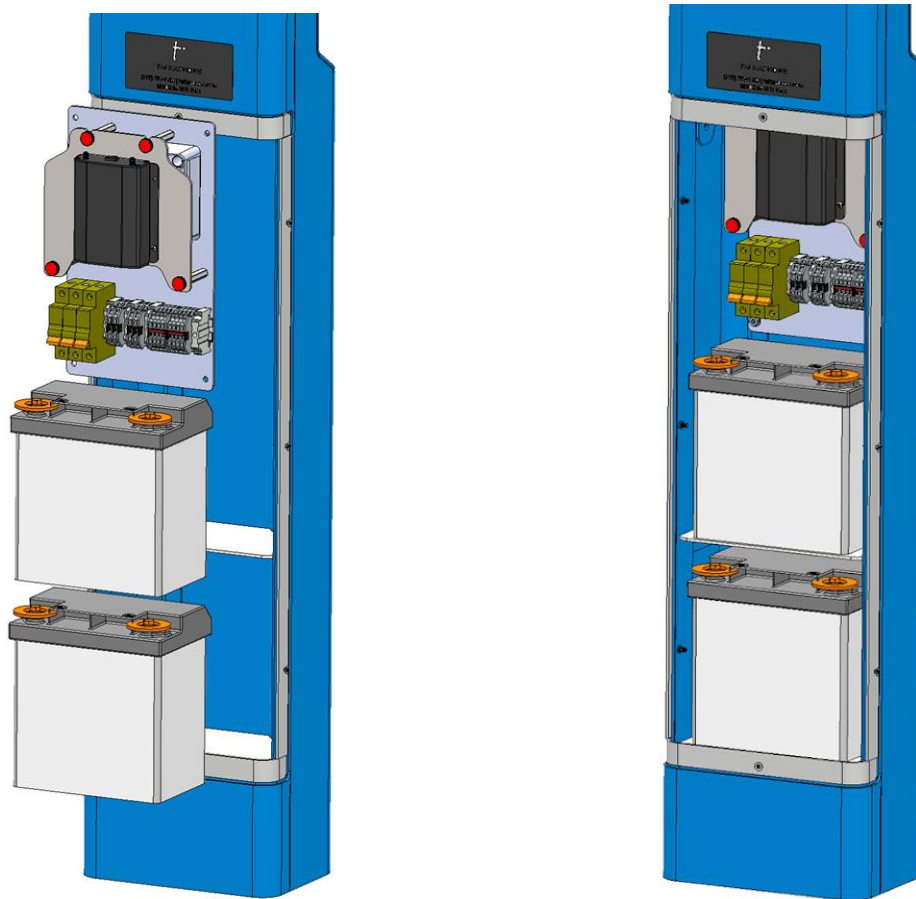
10. On the MIMO LTE antenna, there should be two (2) ends marked in red and labeled as **LTE**—connect these cables to the **Aux** and **Main** connectors on the Cellular Gateway. Any of the two **LTE** cables can connect to either connector.

11. Mount the Cellular Gateway Panel to the Solar Controller Panel using the four (4) #10-32 thumb screws on to the four (4) standoffs (see **Figure 21**).






**Figure 21.** Installation of the Cellular Gateway Panel with Cellular Gateway onto the Solar Controller Panel

12. Install the two batteries onto the two mounting shelves (see **Figure 22**).




**Figure 22.** Solar Controller Panel and Battery installation inside the tower mount


13. Make connections to the battery terminals as indicated in the wiring diagram. Make sure the battery terminals are capped off using the **RED** and **BLACK terminal boots** provided with the preassembled battery cables.
14. Connect the solar panel power cable to the junction box behind the solar panel as covered by the manufacturer's documentation included with the solar panel. Connect the red cable to the positive terminal and the black cable to the negative terminal.
  - a. To open the junction box, use a screwdriver with a 9/64" wide flat head. Insert the screwdriver into the marked opening lug. Gently unlock the lug and release the lid. Do not pull the lid out at once.
  - b. Use included cable gland nut and tighten cable gland to **11.5–13.3 ft-lbs** to ensure IP65 protection and proper tightening of the cable.

	<p><b>NOTE:</b> If the battery voltage drops below a set threshold, the solar controller will shut off power to the “LOAD” terminals. By connecting the emergency communication equipment directly to the battery, emergency calls can still be placed for a small period after the lighting disconnects.</p>
	<p><b>NOTE:</b> Excessive drainage <b>will</b> damage batteries. If lights disconnect due to low voltage, batteries must be replaced promptly to ensure correct system operation during night-time hours.</p>
	<p><b>NOTE: IT IS ESSENTIAL THAT THE BATTERIES ARE CONNECTED IN PARALLEL AND NOT IN SERIES OR SYSTEM DAMAGE WILL OCCUR.</b></p>

15. Connect the orange and black auxiliary control cable pair of the LED Blue Light to the Aux Output #2 of the ETP-520 Call Station.
16. Attach the ETP-520 Call Station to the tower mount with six (6) 10-24 pin-in torx tamper-resistant screws using the T-20 pin-in-torx bit provided.

	<p>Refer to the respective manuals for the ETP-520 Series Analog Call Station and the 4G/LTE Cellular Gateway (ETP-CGW-4G-GSM-V2) for further information regarding the programming and configuration.</p>
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17. A single-gang electrical box with a grounding stud is provided inside the enclosure and should be used for grounding purposes only.
18. Re-attach the access panel cover to the tower mount.
19. Refer to **Figure 23** for a fully assembled view of the **BLPT-SOLAR Series Tower**.

	<p>To ensure proper grounding of all electrical components, the tower enclosure should be effectively earth grounded from the grounding stud with 6 AWG or better insulated, stranded copper wire to the metallic power service raceway (conduit) or an 8-foot or longer corrosion-resistant ground spike.</p> <p>Use effective drip loops on all wiring connections.</p> <p>All wiring should comply with local, regional, and national codes.</p>
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**Figure 23.** BLPT-SOLAR Series Tower assembly overview

## Appendix A: Solar Panel Optimum Tilt Angle Table Year-Round Non-Adjustable Installation

<b>ALABAMA</b>		Mandalay-CA	50	Tallahassee-FL	50
Birmingham-AL	55	Moorpark-CA	55	Tampa-FL	40
Mobile-AL	55	Mount Shasta-CA	65	West Palm Beach-FL	35
Montgomery-AL	55	Needles-CA	55	<b>GEORGIA</b>	
<b>ALASKA</b>		Oakland-CA	60	Atlanta-GA	55
Adak-AK	70	Palm Springs-CA	55	Augusta-GA	55
Annette-AK	75	Pardee-CA	55	Macon-GA	55
Bethel-AK	80	Point Mugu-CA	50	Savannah-GA	55
Gulkana-AK	80	Ramona-CA	55	<b>HAWAII</b>	
Homer-AK	80	Red Bluff-CA	65	Barbers Point-HI	35
Juneau-AK	75	Redwood City-CA	60	Hilo-HI	35
King Salmon-AK	80	Rialto-CA	55	Honolulu-HI	40
Kodiak-AK	75	Richmond-CA	60	Lihue-HI	40
Matanuska-AK	80	Riverside-CA	55	<b>IDAHO</b>	
McGrain-AK	80	Sacramento-CA	60	Boise-ID	65
Summit-AK	80	San Diego-CA	50	Kimberly-ID	65
Yakutat-AK	75	San Francisco-CA	60	Lewiston-ID	65
<b>ARIZONA</b>		San Luis Dam-CA	60	Pocatello-ID	65
Phoenix-AZ	55	San Rafael-CA	60	<b>ILLINOIS</b>	
Prescott-AZ	50	Santa Maria-CA	60	Chicago-IL	65
Tucson-AZ	50	Sun Valley-CA	55	Moline-IL	65
Winslow-AZ	50	Sunnyvale-CA	60	Springfield-IL	65
Yuma-AZ	50	Victorville-CA	60	<b>INDIANA</b>	
<b>ARKANSAS</b>		Villa Park-CA	55	Evansville-IN	60
Fort Smith-AR	60	Visalia-CA	60	Fort Wayne-IN	65
Little Rock-AR	60	Walnut-CA	60	Indianapolis-IN	60
<b>CALIFORNIA</b>		Warm Sprgs Dam-CA	60	South Bend-IN	60
Alpine-CA	55	Yucca Valley-CA	55	<b>IOWA</b>	
Arcata-CA	65	<b>COLORADO</b>		Burlington-IA	65
Arrowhead-CA	55	Akron-CO	55	Des Moines-IA	65
Bakersfield-CA	60	Alamosa-CO	50	Mason City-IA	65
Blythe-CA	50	Boulder-CO	60	Sioux City-IA	65
Butler Valley Ranch-CA	65	Colorado Springs-CO	55	<b>KANSAS</b>	
Carlsbad-CA	55	Denver-CO	60	Dodge City-KS	60
Carris Plain-CA	60	Eagle-CO	65	Goodland-KS	65
Chula Vista-CA	55	Fort Collins-CO	55	Topeka-KS	65
Daggett-CA	60	Grand Junction-CO	65	Wichita-KS	60
Davis-CA	60	Pueblo-CO	55	<b>KENTUCKY</b>	
El Cajon-CA	55	<b>CONNECTICUT</b>		Lexington-KY	60
El Centro-CA	45	Hartford-CT	60	Louisville-KY	60
El Segundo-CA	55	<b>DELAWARE</b>		<b>LOUISIANA</b>	
El Toro-CA	55	Wilmington-DE	65	Baton Rouge-LA	55
Escondido-CA	55	<b>DISTRICT OF COL.</b>		Lake Charles-LA	50
Fresno-CA	60	Washington, D.C.	60	New Orleans-LA	55
Huntington Beach-CA	55	<b>FLORIDA</b>		Shreveport-LA	55
Inyokem-CA	60	Apalachicola-FL	55	<b>MAINE</b>	
Jolon-CA	60	Daytona Beach-FL	45	Bangor-ME	65
Lancaster-CA	60	Jacksonville-FL	50	Caribou-ME	65
Long Beach-CA	55	Miami-FL	35	Portland-ME	65
Los Angeles-CA	55	Orlando-FL	40		

<b>MARYLAND</b>		<b>NEW HAMPSHIRE</b>		Medford-OR	65	Waco-TX	55
Baltimore-MD	60	Concorde-NH	65	North Bend-OR	65	Wichita Falls-TX	55
Patuxent River-MD	60	<b>NEW JERSEY</b>		Pendleton-OR	65	<b>UTAH</b>	
<b>MASSACHUSETTS</b>		Lakehurst-NJ	65	Portland-OR	65	Bryce Canyon-UT	60
Blue Hill-MA	60	Newark-NJ	65	Redmond-OR	65	Cedar City-UT	65
Boston-MA	65	<b>NEW MEXICO</b>		Salem-OR	65	Salt Lake City-UT	65
<b>MICHIGAN</b>		Albuquerque-NM	55	Whitehorse Ranch-OR	65	<b>VERMONT</b>	
Alpena-MI	65	Clayton-NM	50	<b>PENNSYLVANIA</b>		Burlington-VT	65
Detroit-MI	65	Farmington-NM	60	Allentown-PA	65	<b>VIRGINIA</b>	
Flint-MI	60	Roswell-NM	50	Erie-PA	60	Norfolk-VA	60
Grand Rapids-MI	60	Truth or Conseq.-NM	45	Harrisburg-PA	65	Richmond-VA	60
Houghton-MI	65	Tucumcari-NM	50	Philadelphia-PA	65	Roanoke-VA	60
Sault St. Marie-MI	65	Zuni-NM	50	Pittsburgh-PA	60	<b>WASHINGTON</b>	
Traverse City-MI	65	<b>NEW YORK</b>		Wilkes-Barre-PA	65	Olympia-WA	65
<b>MINNESOTA</b>		Albany-NY	65	<b>RHODE ISLAND</b>		Seattle-WA	65
Duluth-MN	65	Binghamton-NY	65	Providence-RI	65	Spokane-WA	70
Internat'l Falls-MN	70	Buffalo-NY	65	<b>SOUTH CAROLINA</b>		Whidbey Island-WA	70
Minn-St. Paul-MN	65	Massena-NY	65	Charleston-SC	55	Yakima-WA	65
Rochester-MN	65	New York City-NY	65	Columbia-SC	55	<b>WEST VIRGINIA</b>	
<b>MISSISSIPPI</b>		Rochester-NY	60	Greenville-SC	60	Charleston-WV	60
Jackson-MS	55	Syracuse-NY	60	<b>SOUTH DAKOTA</b>		Huntington-WV	60
Meridian-MS	55	<b>NORTH CAROLINA</b>		Huron-SD	65	<b>WISCONSIN</b>	
<b>MISSOURI</b>		Asheville-NC	60	Pierre-SD	70	Eau Claire-WI	65
Columbia-MO	60	Cape Hatteras-NC	60	Rapid City-SD	65	Green Bay-WI	65
Kansas City-MO	65	Charlotte-NC	60	Sioux Falls-SD	65	La Crosse-WI	65
Springfield-MO	60	Cherry Point-NC	55	<b>TENNESSEE</b>		Madison-WI	65
St. Louis-MO	60	Greensboro-NC	60	Chattanooga-TN	55	Milwaukee-WI	65
<b>MONTANA</b>		Raleigh-NC	60	Knoxville-TN	60	<b>WYOMING</b>	
Billings-MT	70	<b>NORTH DAKOTA</b>		Memphis-TN	60	Casper-WY	70
Cut Bank-MT	70	Bismarck-ND	70	Nashville-TN	60	Cheyenne-WY	60
Dillon-MT	70	Fargo-ND	70	<b>TEXAS</b>		Lander-WY	65
Glasgow-MT	70	Minot-ND	70	Abilene-TX	55	Rock Springs-WY	65
Great Falls-MT	70	<b>OHIO</b>		Amarillo-TX	50	Sheridan-WY	70
Helena-MT	70	Akron-OH	60	Austin-TX	50		
Lewiston-MT	70	Cincinnati-OH	60	Brownsville-TX	50		
Miles City-MT	70	Cleveland-OH	60	Corpus Christi-TX	50		
Missoula-MT	65	Columbus-OH	60	Dallas-TX	55		
<b>NEBRASKA</b>		Dayton-OH	60	Del Rio-TX	45		
Grand Island-NE	65	Toledo-OH	65	El Paso-TX	50		
North Omaha-NE	65	Youngstown-OH	60	Fort Worth-TX	55		
North Platte-NE	65	<b>OKLAHOMA</b>		Houston-TX	55		
Scottsbluff-NE	65	Oklahoma City-OK	60	Kingsville-TX	50		
<b>NEVADA</b>		Tulsa-OK	60	Laredo-TX	50		
Elko-NV	65	<b>OREGON</b>		Lubbock-TX	50		
Ely-NV	65	Astoria-OR	65	Lufkin-TX	55		
Las Vegas-NV	55	Bend-OR	70	Midland-TX	50		
Lovelock-NV	65	Burns-OR	65	Port Arthur-TX	55		
Reno-NV	65	Eugene-OR	65	San Angelo-TX	50		
Tonopah-NV	60	Hermiston-OR	65	San Antonio-TX	55		

**VI. Servicing**

For product service and repair, please contact:

Talkaphone Technical Support  
Email: [support@talkaphone.com](mailto:support@talkaphone.com)  
Phone: 773.539.1100

**VII. Limited Warranty Information**

For the latest warranty information, please visit:

<https://www.talkaphone.com/terms-of-use-and-limited-warranty>