

MANUAL

Pages 1-2	- Ventilation Requirements
Page 3	- Electrical Requirements
Page 4	- Primary / Secondary
Pages 5	- Removing a Module
Page 6	- Temperature & Brightness Sensors
Pages 7-11	- Mounting Guidelines
Page 12	- Grounding Requirements
Pages 13-18	- Connectivity Methods

Ventilation

VENTILATION REQUIREMENTS

Electronic Message Centers (EMCs) require ventilation. As Illustrated, Impact EMCs draw fresh/cool air in through a vent at the bottom of the

cabinet's rear side, and use cooling fans located inside the top of the cabinet to draw cool air up & out of vents located at the top. Improper ventilation will result in the EMC overheating. Impact's EMCs will shut themselves off when they overheat & will restart after cooling. HOWEVER overheating will cause damage, thus ventilation should be carefully considered.

Failure to provide proper ventilation can result in the warranty being voided.





A 2" x .125" thick steel mounting angle runs the length of the top and bottom of each Impact single cabinet enclosure EMC. This design provides tremendous flexibility in mounting.

(Angle may vary based on product line selected. Always refer to drawing for measurements.)

Ventilation



When installing an IMPACT EMC please adhere to the following guideline: Allow a minimum of 25 square inches of total air intake and 25in² of exhaust per foot of cabinet length.

Ideal ventilation: 2" gap at top/bottom. Ends may be sealed however best practice is to use perforated material or vents. Alternative Ventilation Options: If no ventilation is available at top: Provide a minimum of a 2" gap at bottom, use perforated material withno less than 40% open area to conceal sides. Air baffles may be required to separate exhaust from intake. If no ventilation is available at top and bottom: Do not cover sides, air baffles may be required to separate exhaust from intake. Insufficient ventilation will reduce the life of the EMC and the warranty is subject to be voided.

SIGN CABINET

Impact EMCs are built to last. Both the lightweight aluminum cabinet and steel mounting angle are powder coated for a durable yet subtle finish. Lifting plates rings are located at the top of the display and can be removed after installation as their threaded cavities do not pass through to the inside of the cabinet - fill cavity with silicone or utilize the bolt after removing the lifting plate.

Electrical

Consult your original quote, the sign's MET UL48 Standard Label and/or Impact LED provided shop drawing for electrical load requirements.

Best practices for power:

- install all signs and sign cabinets per National Electric Code.
- always check wire color, MET UL48 Standard label on the back of the master unit, and shop drawings to confirm voltage.
- always follow lock-out/tag-out procedures to ensure safety when working on, installing or connecting to electrical lines.
- each electronic message center or LED sign cabinet should be on a dedicated circuit without a photocell or timer.
- each electronic message center should have an in-earth copper ground rod 3/8" diameter and 6' long.
- always verify primary power voltage and continuity before connecting power to the EMC or LED sign cabinet.
- connection to the EMC or LED sign should be either:
 - (a) primary circuit run through conduit directly into the signs terminal block.
 - (b) primary circuit run to a weather-tight junction box or breaker panel and then a secondary whip connecting the junction point to the terminal block.

*If you have any questions, please contact the Project Management department at Impact LED Signs by calling 1-800-398-0576.

Primary/Secondary

***This page/information only applies to sign systems built as a primary/secondary or 2-view pair.



Locate the quick access data connection ports on the Primary unit and Secondary unit. Firmly seat the cable and twist to ensure a solid connection. Gather and zip tie any loose cable. The **Input Data** Port is located on the left side when looking at the back of the unit. The **Output Data** Port is located on the right side when looking at the back side of the unit.



Remove Module

TURN POWER TO THE SIGN OFF!

Each LED module features a hole each corner, approximately 1" from each edge. This hole accepts a 3mm hex head wrench. Insert the wrench and once seated gently turn counter clockwise to disengage the module locking mechanism. A "click" sound will indicate the lock is fully disengaged. All four locks will need to be disengaged to remove the module.



As you remove the module from the sign cabinet, disconnect the power and data cables.

- NEVER LET MODULES HANG FROM POWER/DATA CONNECTIONS
- A SAFETY CABLE IS INSTALLED TO PREVENT THE MODULE FROM FALLING. ALWAYS REINSTALL SAFETY CABLE WHEN REPLACING MODULE.

Temp & Brightness

The temperature and brightness sensors both feature removable, threaded washers which can be used to secure the sensor to a bracket or panel. Be sure to coil, zip tie and secure any excess cable.



**Signs running Impact Cloud software will not come with a temperature sensor the temperature is fed to the display via an online weather application.



The brightness sensor should be facing South if possible, never up or down. This will allow the most accurate reading of ambient light.

The temperature sensor should be mounted in shade and facing down towards the ground if possible.

GENERAL MOUNTING GUIDELINES

This information is for general reference. It does not replace professionally engineered drawings. Please contact the Impact LED Project Management Team with any specific questions.



SIDE VIEW

GENERAL MOUNTING GUIDELINES

Steel mounting angles are provided on the back of each LED sign cabinet. Fasteners, support columns, brackets and electrical wiring conduit/accessories are not provided unless specifically included as a line item from Impact LED.



PERSPECTIVE VIEW

GENERAL MOUNTING GUIDELINES











DISPLAY GROUNDING GUIDELINES



- Grounding copper wire (conductor) must run from the grounding lug of the display cabinet direct to the grounding rod.
- At no point in time can the display structure (support structure, pole) be used as a means of grounding the display cabinet. Although a steel structure is conductive, a copper rod maintains to be a superior conductor throughout the life of the sign. Also, NEC Sec. 250-54 requires the resistance to ground of a single-made electrode to be 25 ohms or less.
- It is recommended but not required that each cabinet or display face have an independent grounding rod.
- It is recommended that the grounding wire be connected to the grounding rod by exothermic weld.
- Grounding rod must be completely buried at a minimum of 8ft (length of the rod).
- Grounding wire must be one continuous length without a splice or joint (NEC250.64 C).
- Distance of 8ft is recommended between display structure and grounding rod or a measured grounding resistance of 10 Ohms or less.
- Distance between grounding rods must be at a minimum of 6ft from one to another.

Example of unacceptable grounding.



Support structure cannot be used as means of an earth ground

Connectivity Methods

Impact LED signs accept a standard ethernet connection. This is also referred to as a cat5e/cat6e cable, network cable, LAN cable or Rj45 ethernet connection. A number of different communication systems can be deployed in order to achieve connectivity with your Impact LED sign; wifi bridge kit, 4G modem, LAN cable and fiber



4G

Impact LED utilizes the Verizon network infrastructure. Connectivity can vary from location to location depending on tower coverage and ambient conditions. Even though the 4G modem is mounted and powered inside the LED sign cabinet, Impact LED provides external antennas with each 4G modem and requires that they be external to the sign, as high as possible above the LED sign. It is the Dealers responsibility to securely mount and document the location of the antenna as well as test connectivity prior to leaving the installation.



FIBER

Fiber can be a great option for locations with no cellular service who require connectivity over a significant distance. Confirm the fiber specifications with your Impact LED Project Manager prior to installation. Impact LED provides SC fiber media converters which are wide temperature/industrial grade.

Connectivity Methods

WiFi Bridge

WiFi bridge kits are also a viable solution for many applications. This WPA encrypted connection is a point-to-point link between two antennas which have been pre-paired to communicate with each other. With a clear line of sight, a wifi bridge kit can provide 100mbps transmissions over distances in excess of 1 mile. Both the 'Sender' and 'Receiver' antenna should be facing towards each other with as few (if any) obstructions between them as possible. The 'Receiver' antenna should always be mounted on the outside of the sign. For the longevity of the antenna, we suggest that installations transmitting over short distances attempt to leave the 'Sender' antenna inside the User's building. However, it may be necessary to mount the antenna external to the building if signal is weak or intermittent. When installing the building side antenna, connect the data cable in the LAN port of the POE injector into the local network switch. Then connect the data cable in the POE port of the POE injector into the antenna.



What's in a wifi bridge kit?

ETHERNET CABLE - from adapter *LAN* port to controller (already inside sign) - *Fig. A*ETHERNET CABLE - from adapter *POE* port to Receiver antenna (already inside sign) - *Fig. B*ETHERNET CABLE - from adapter *LAN* port to customer network (in box) - *Fig. C*ETHERNET CABLE - from adapter *POE* port to Sender antenna (in box) - *Fig. D*(2) 24v POWER ADAPTERS - (one already inside sign, one in box) *Fig. E*(2) WIFI ANTENNAS - (1) Sender, (1) Receiver (both in box) *Fig. F*(2) MOUNTING BRACKETS - with zip ties (both in box) - Fig. G

**DO NOT DRILL INTO LED SIGN CABINET



Federal Communications Commission Interference Statement

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection agains tharmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio or complications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- . Connect the equipment into an outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/TV technician for help.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.



Verify connectivity by checking lights on the back of the antenna. Connectivity lights are the four lights to the right of the Power and Data lights. If there is no connectivity lights first verify line of sight. Second restart the closest antenna by disconnecting power. If antennas do not link contact Technical Support.

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IMPACT SIGNS

Wifi Kit Installation

Impact LED Signs



PARTS LIST:

- Mounting Bracket (x2)
- Zip Tie (x2)
- Sign Antenna (x1)
- Building antenna (x1)
- PoE (x1)
- Gear Clamp (x2)
- 50ft Cat5e (x1)
- 4ft Cat5e (x1)







Install the mounting brackets in a position that will allow the Sign antenna to be in line of sight with the Building antenna.

Note: The Sign antenna can be mounted anywhere with good line of site to the Building antenna.





Secure the Sign antenna to the mount using either a zip tie or a gear clamp.



Before moving forward with this step verify project manager has been contacted to ensure proper mount position of building antenna. Install the mounting brackets in a position that will allow the Building antenna to be in line of sight with the Sign antenna.

Note: The Building antenna can either be mounted outside of the building or inside of a window with line of sight.



Depending on installation instructions from the project manager this step may be performed by client. Connect PoE adapter via RJ45 Cat 5,5e,6 to Building antenna, plug in the adapter to a power outlet. See example above (example for step D).

Note:

INPACT cloud+

Impact Cloud is a user friendly cloud-based communication method for any Impact LED sign. This Browser based system works from any tablet, phone or computer with internet access.



- Easy to learn, easy to use & easily maximizes the sign's capabilities to maximize the power of the display.
- Create feature content, design reusable templates and save playlists for as long as you want that will never get lost.
- Easily move messages around the screen, enlarge, shrink or rotate content and try different fonts and colors.
- Access and monitor your sign(s) no matter where they are and no matter where you are at any time.
- Instant access to ever expanding library of graphics.
- No software updates to download...ever.

UPDATE YOUR MESSAGES FROM ANY DEVICE

USERS CAN NOW PUBLISH CONTENT TO THEIR SIGN FROM THEIR Ipad, MOBILE DEVICE OR COMPUTER.

Connectivity Methods





Network Configuration Requirements

The Electronic Message Center Marquee leaves the factory configured for DHCP by default. To ensure a swift and easy installation, the local network may need to be prepped for our cloud controllers. 4G connections are plug and play, requiring no additional configuration.

The fall-back addresses are:

Sign Side Radio: 192.168.0.219 Building Side Radio: 192.168.0.218

General Connectivity Configuration

On most networks we find minimal configuration is needed and the signs are plug and play. Network Traffic for the sign needs to be opened to our Main Server Address.

Cloud Address:

Server.cloudled.com

Access.Impactledsigns.com

For Cloud signs to communicate properly,

Ports:

HTTPS 443/TCP websocket 8443/TCP NTP 123/UDP

We also require network traffic is open to our amazon S3 bucket: **weather.cloudled.com**

External Network traffic access will need to be granted through all firewalls and all network filtering systems.

This is a basic outline of our network configuration requirements, there is always the chance that additional changes may need to be made.

For technical questions please reach out to tech@impactledsigns.com or 1-800-398-0576 #3

