LG Hausys

TECHTOP

FABRICATION GUIDE

SKU TECHTOPFAB1.0

Table of Contents

Product Definition

1. What is TechTop?

TechTop is an innovative solution that embeds wireless charging technology into surface material.
The technology is seamlessly embedded into HI-MACS® to stay connected at the right times.

2. Is My Phone TechTop-Ready?

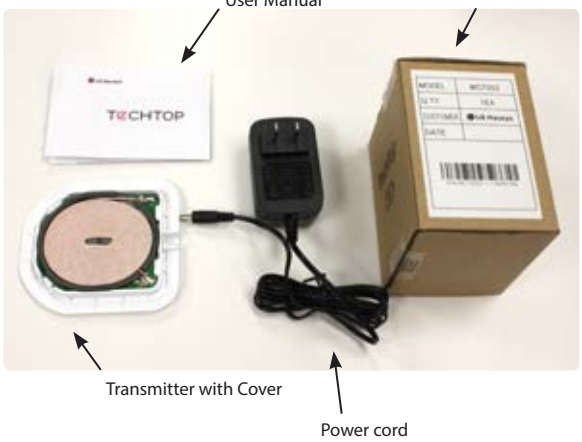
TechTop is a solution for all mobile devices. For those mobile phones that do not come already equipped with a Qi compatible receiver built-in , then an affordable accessory is readily available to transform your phone to be compatible with TechTop regardless of manufacturer or brand.

* Use of QI certified receiver is recommended for best performance.

My Phone is ...

- Receiver Embedded → Ready to GO
- Receiver Not Embedded
  - Phone Case 
  - Slide-in Type 
  - Patch Type 
  - Plug-in Type (Dongle) 

3. Contents in the Box



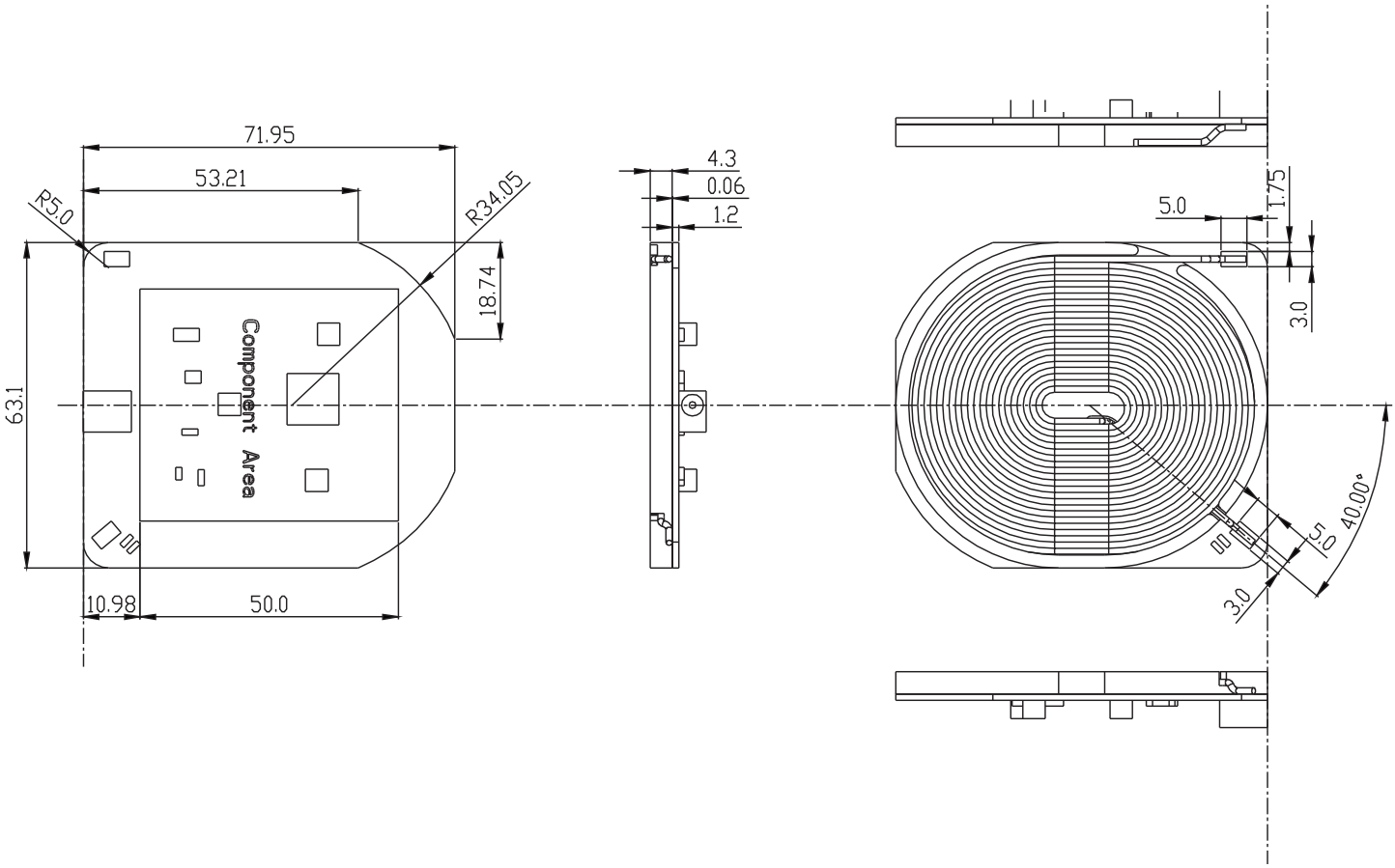
Items above come included with the purchase of TechTop (transmitter, power cord and user manual).

Visit our website to learn more about model accessory support: www.LGTechTop.com

Note: TechTop is designed to charge all Qi enabled devices up to 5W with micro usb ports including cameras and mp3 players.
Receiver type, color and size may vary.

Product Specification

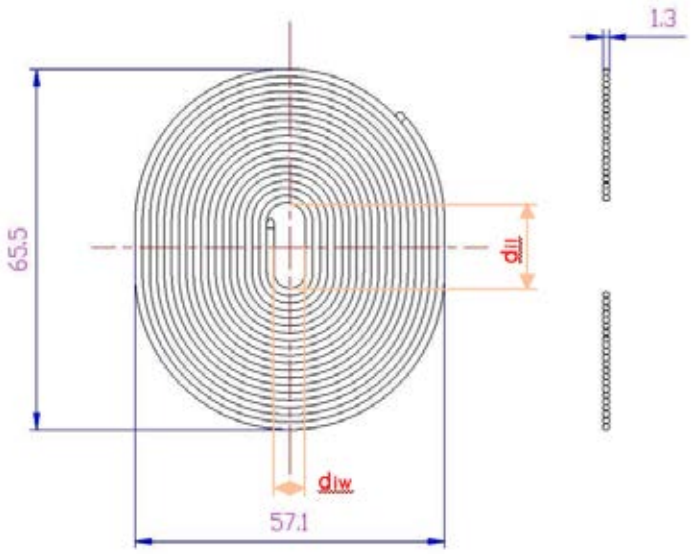
1. Dimensions



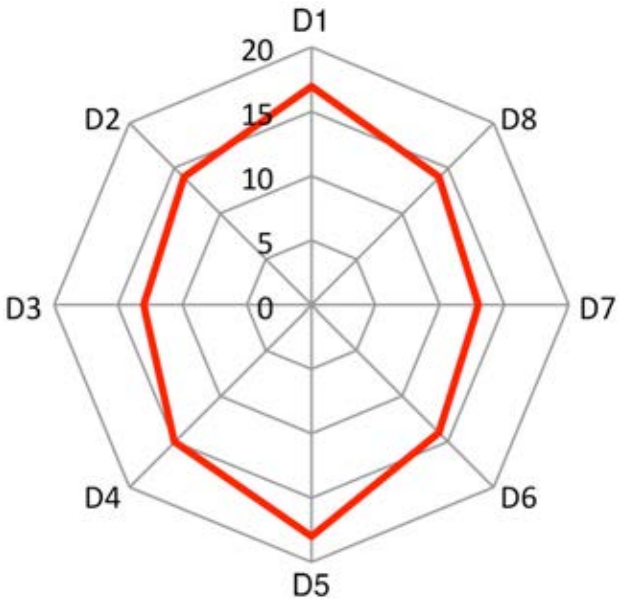
2. Technical Specifications

Measurement Items	Conditions		Specification
Dimension	Module Ass'y		68.1mm(w) x 85.0mm(h) x 11.3mm(d)
	Core Module Ass'y		63.1mm(w) x 71.94mm(h) x 4.8mm(d)
Supply Voltage	WPC R x IOP Test Condition		DC 12V/1A
Operating Frequency	No Load Standby (Ping Frequency)		125 KHz
	SPACON Rx		110 KHz ~ 205 KHz
Charging Area	SPACON Rx / Condition: Rx Coil Center, WPC V1.1.2		22 x 26mm
Charging Efficiency	Phone 1A Charging, 6T		60% Over
Charging Temperature	SPACON Rx 5W Load Tx Surface Temperature Ambient Temperature: 25°C	WPC standard	Δt ≤ 10°C
		Phone Dummy	≤ 45°C
Power Consumption	Standby Power	Product only	≤ 60mW
		Product with adaptor	≤ 100mW
Safety	FOD		WPC Ver 1.1.2
	Over Temperature Protect		90°C
Standard	WPC Ver 1.1.2		New (CR275)

3. Coil Specifications & Charging Area



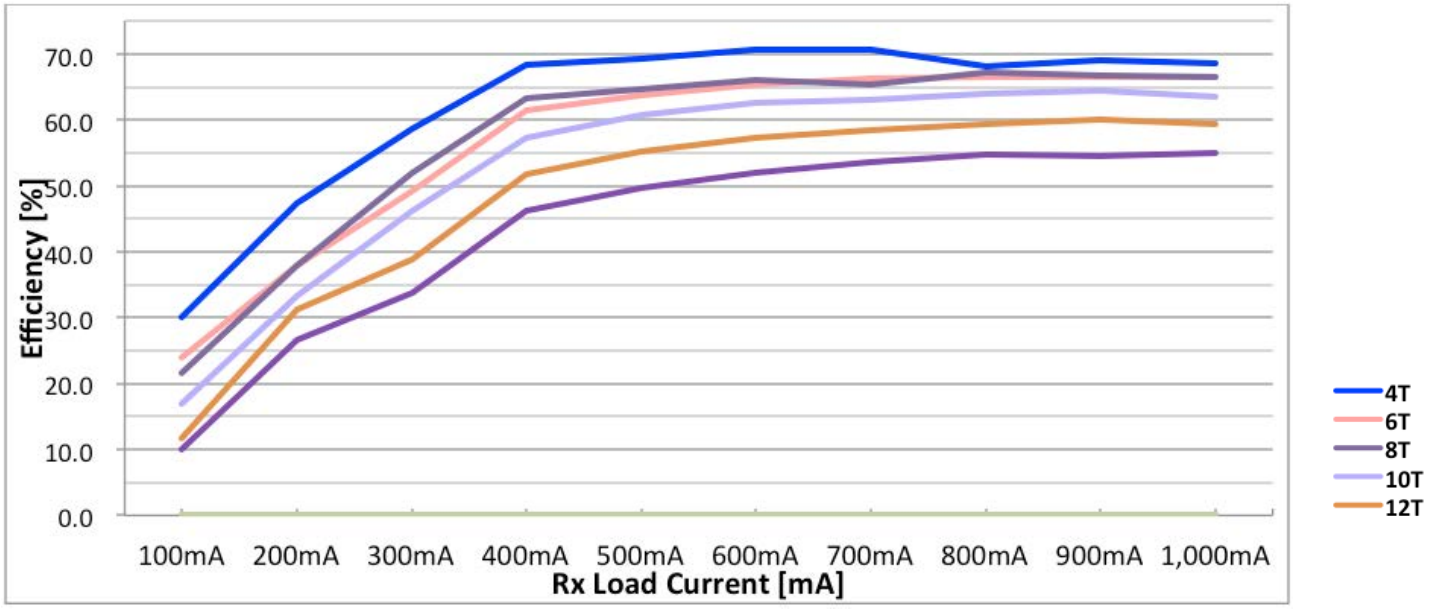
Parameter	Value
Shield Inductance	19uH$^{\pm 10\%}$
Shield Capacitance	122nF$^{\pm 10\%}$
Outer Length	65.5$^{\pm 0.5}$mm
Inner Length	16.5$^{\pm 1.0}$mm
Outer Width	57.1$^{\pm 0.5}$mm
Inner Width	4.5$^{\pm 0.5}$mm
Number of Turns	22
Number of Layer	1
Wire	USTC 0.08mm, 115 Strand, Racetrack-like shape



Charging Area : 1.5" x 1.5" with respect to center of the coil

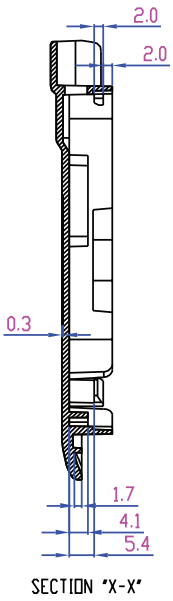
4. Charging Efficiency

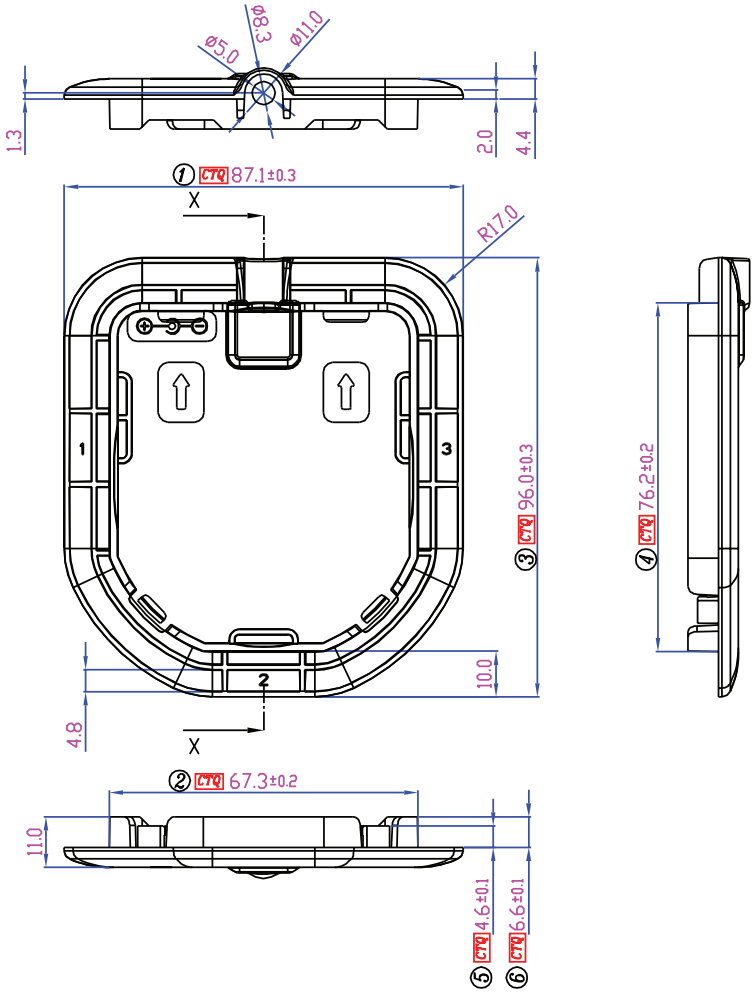
- The charging efficiency of Tx varies depending on the vertical(z-axis) distance between centers of coil and designated indicator or sticker on top surface.
- Greater the z-axis distance, less charging efficiency Tx displays.
- Following graph shows charging efficiency in various z-axis distance.
- Required **thickness of 6 mm is optimal target** or **9mm as maximum thickness** from the top surface for the best performance for HI-MACS solid surface material.



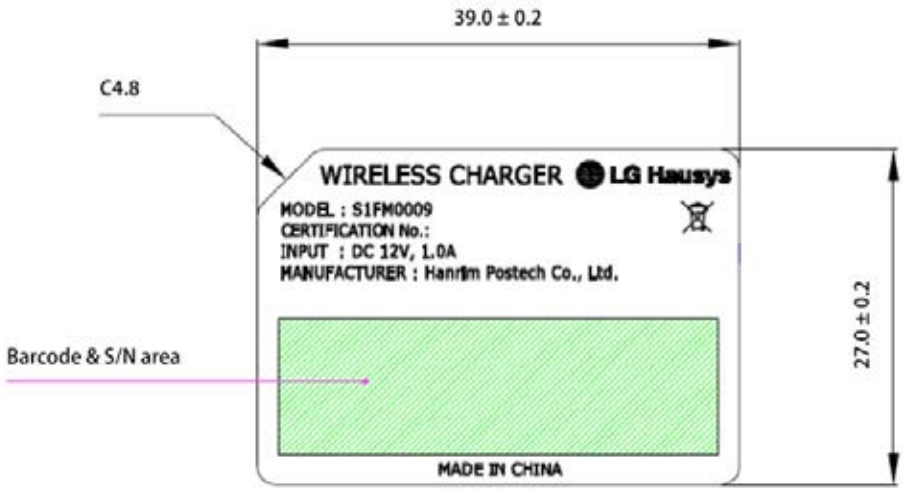
5. Bracket Dimensions

To embed the device in the material, apply approximately 1cm^3 of silicone to the three spots of the bracket indicated with the Red circle as shown in the above image.





Label



[Label detail]

[Example image]

7. Certification

Qi is an interface global standard developed by the WPC (Wireless Power Consortium) for inductive electrical power transfer. The Qi system comprises a power transmission pad and a compatible receiver in a portable device. The charging system undergoes resonant inductive coupling in order to charge the device. TechTop is officially Qi certified by WPC.

FCC (Federal Communications Commission) is an independent agency of the United States government which regulates interstate and international communications by many electrical devices such as radio, television, wire, satellite, and cable. TechTop is FCC certified product.
Certification number: 2ABEN-S1FM0009

UL (Underwriters Laboratories) is a safety consulting and certification company for safety analysis of many new technologies, most notably in electrical industry. UL provides safety-related certification, validation, testing, inspection, auditing, advising and training services to its clients. TechTop is UL certified product.

8. Handling and Storage

- Keep the transmitter dry and away from humidity, water or moisture. Installation of the device should be done at least 1 foot away from sinks and dishwasher to avoid damage.
- Do not use or store the device in high or cold temperatures. Abnormal temperatures can damage the device. Use in room temperature.
- Use the device for its intended purposes only. Improper use may result in a risk of fire, explosion, or other hazard.
- Do not attempt to modify the device for any reason. Any unauthorized modification can damage the device.
- Do not handle the device roughly; dropping, throwing, shaking, knocking.
- Do not shake or apply too much pressure on power jack of the device when plugging in the electrical adaptor.
- Keep the transmitter away from any electronically driven medical devices due to potential interference with the medical device.

Maintenance & Troubleshooting

1. Troubleshooting Instruction

What should I do if my charger isn't working?

a. Make sure your receiver on your mobile device is Qi compatible.

b. Make sure your mobile phone is placed on the charging spot. Receiver should be aligned with center of transmitter (charge indicator spot).

c. Make sure no metallic material is between the receiver and the transmitter, which can conductively interrupt the transmission.

d. Re-connect individual receiving unit to the cell phone and attempt to charge it again.

e. Unplug the power cord from the electrical outlet and wait 20 seconds before plugging the power cord back in. Place your phone on the indicator spot, wait a few seconds for the transmitter to connect to the receiver and see if your battery is charging.

f. Please contact our Warranty department (See '3. Warranty' on page 8) for more information if you need additional support.

NOTE: TechTop transmitter is intuitive enough to stop charging if the battery is full. The phone will not charge when the battery is at 100%.

2. Caution

a. The wireless charging transmitter is a sensitive electronic device. To ensure proper operation, install at least 1 foot away from below areas:

- i. High temperature area
  - 1. Oven
  - 2. Heater
- ii. Steam or wet area
  - 1. Dishwasher
  - 2. Humidifier
  - 3. Sink/ Vanity Bowl

b. Do not install the wireless charger underneath metallic material. The transmitter transmits electric power through the material and metallic material interferes with power transmitting and may cause the unit to overheat.

3. Warranty

LG Hausys offers a (1) year limited warranty on TechTop product, warranting that the product will be free of manufacturing defects. This warranty covers product defects for a period of one year after the date of installation on product installed using LG Hausys surface material. If during the warranty period the product should fail, LG Hausys will replace the product, free of charge. This (1) year limited warranty applies to TechTop product only and excludes any labor, fabrication or installation.

Need More Help? Please visit us online to find the latest support information and online manuals:

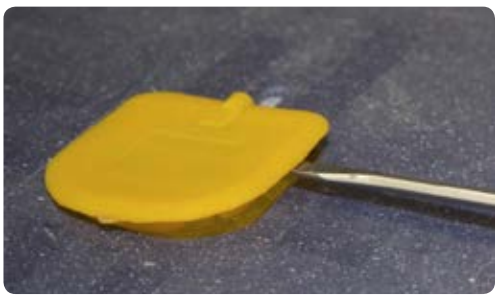
Website: www.LGTechTop.com

To file a warranty claim, please call **866-767-9764**, proof of purchase is required.

Replacing TechTop transmitter:

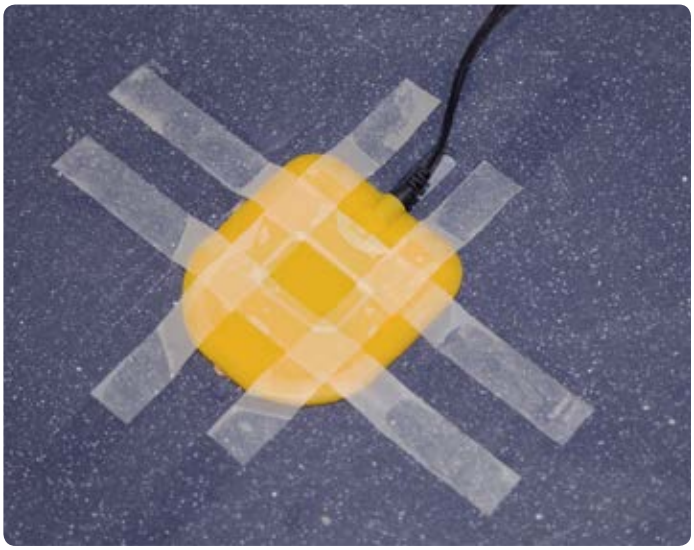
a. Access the bottom of the surface where the transmitter is installed and unplug the AC adaptor from the unit and power cord from the electrical unit.

b. Detach the front and sides of the bracket from the bottom surface using a flat-head screwdriver to remove the silicone bond from the surface.



c. Scrape off any silicone residue from the bottom of the surface with a scraper.
d. Apply the silicone bond provided in your replacement kit to the three designated spots.

e. Attach the replacement unit to the already routed out area and completely secure it with scotch tape until the silicone bond becomes completely hard. It will take approximately 15 minutes to harden.
f. Once the silicone has set and become hard, remove the scotch tape.
g. Connect the replacement AC power cord to the unit and plug in electrical outlet. Place your phone (with compatible Qi receiver) on the charging indicator spot and wait a few seconds for the transmitter and receiver to connect. Once you have a good connection, your mobile phone will begin to charge.
h. Pack the old unit into the box that was provided by LG Hausys TechTop after the warranty claim. This is the box that contained the new transmitter with the packing slip.



1. Introduction

This Section addresses some additional considerations for fabrication tops of the wireless charge device.

2. Base Cabinet Top Layout

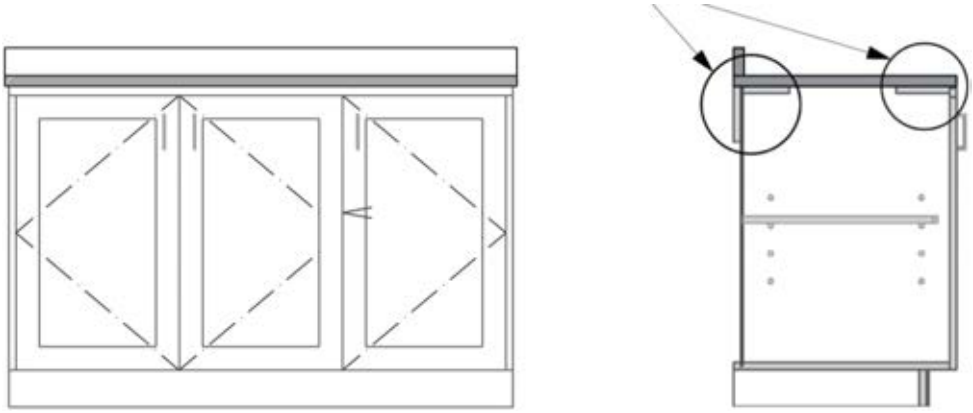
There are two different cabinets in the cabinet group; one is kitchen base cabinets, and the other is vanity cabinets. As fabricator you must consider the varying depths of the cabinets, separating the kitchen and vanity cabinets when you lay out the tops. For example, the depth of a kitchen cabinet is 24", and the depth of vanity cabinets is 21". There are support frames at the front and back that measure between 4" to 6". Therefore, the recommendation is that you do a control measurement even though you have been provided a cabinet drawing with the dimensions from the manufacturer. By following the precautions, it will save you money and time by not having to retrofit and/or replace previously cut tops. Finally, please do NOT install wireless charging pad near water area and steam heat areas.
Please see example FIGURE 'A1-A2'

- Precaution: All electric wiring needs to be done by a licensed electrician. LG Hausys is NOT providing electrical services and will not be held responsible for any additional cost associated with electrical work.
- Prohibited: Do NOT install directly on top of cabinet frames and hardware. Please consult drawing by manufacturer and check actual dimensions for proper support.

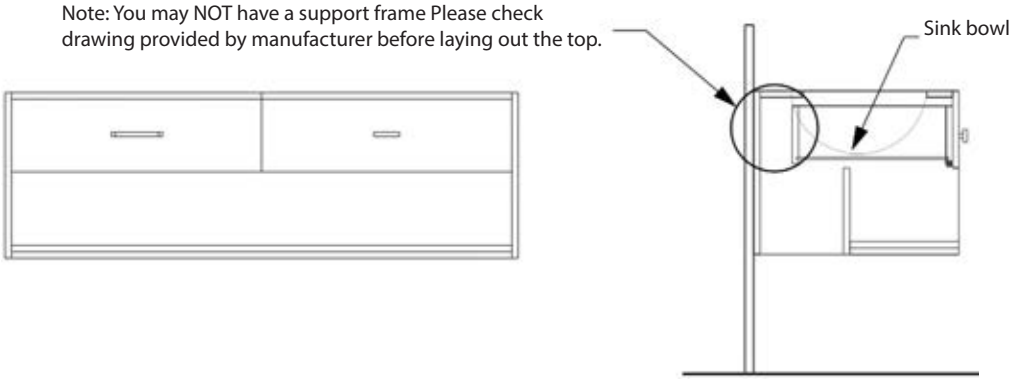
Note: Please check drawing provided by manufacturer and onsite measurement before laying out the dimensions, because you may have chance to have changes by an installer.

FIGURE A1 - A2

Do NOT install right on top of cabinet support frames.
Note: You may NOT have a support frame, please check actual drawing provided by manufacturer before laying out the top.



Cabinet support frames and near drawers.
Note: You may NOT have a support frame Please check drawing provided by manufacturer before laying out the top.

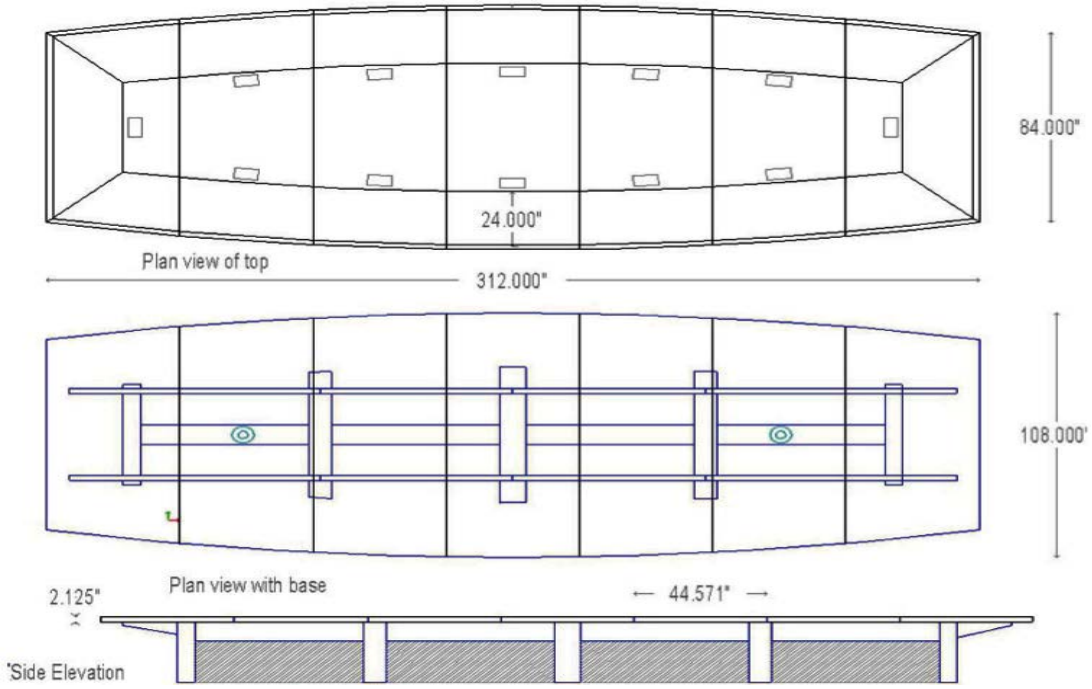


3. Furniture Top Layout

a. Table

As fabricator you need to take into account what type of leg design and type of frame as you lay out the top of a conference room table, end table, coffee table, and table pedestal. Further, when designing for commercial spaces, please consider placement of electrical outlets, data ports, and devices under or near the table.

Conference Room Table



End Table

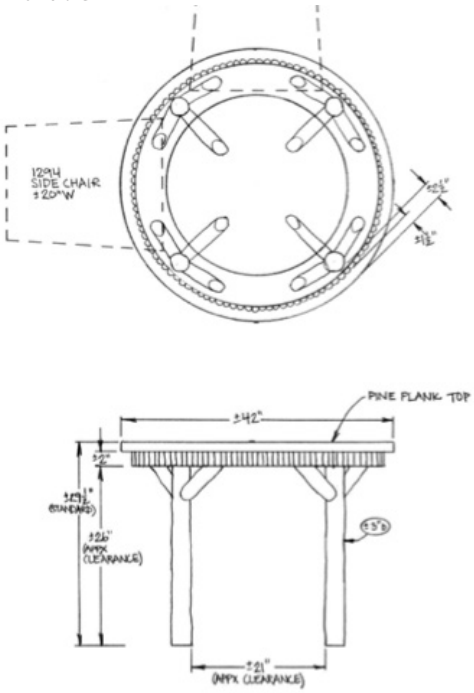
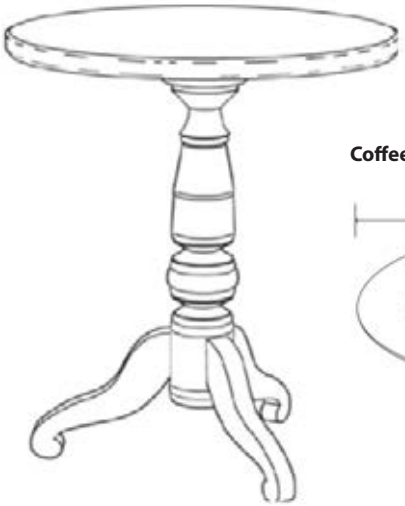
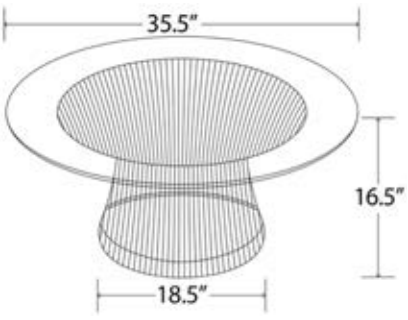


Table Pedestal



Coffee Table



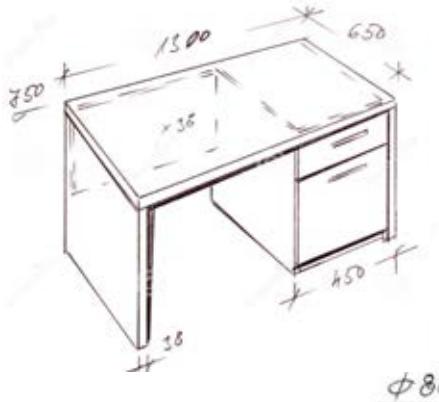
b. Desk

As fabricator you need to take into account what type of leg design and type of frame as you lay out the top of a home or commercial desk. Further, please consider what kind of hardware is installed, particularly the type of drawer slides – whether under-mount or side- mounted – together with distance from back panel to the end of drawer boxes. Check and verify actual measurements against manufacturer drawing dimensions. Do NOT install wireless charging pad directly on top of cabinet hardware. By following the precautions, it will save you money and time by not having to retrofit and/or replace previously cut tops.

Please see FIGURE 'B'

- Precaution: All electric wiring needs to be done by a licensed electrician. LG Hausys is NOT providing electrical services and will not be held responsible for any additional cost associated with electrical work.
- Prohibited: Do NOT install directly on top of table or desk frames and hardware. Please consult drawing by manufacturer and check actual dimensions for proper support. Note: Please check drawing provided by manufacturer and onsite measurement before laying out the dimensions, because you may have chance to have changes by an installer.

Home Desk



Office Workstation

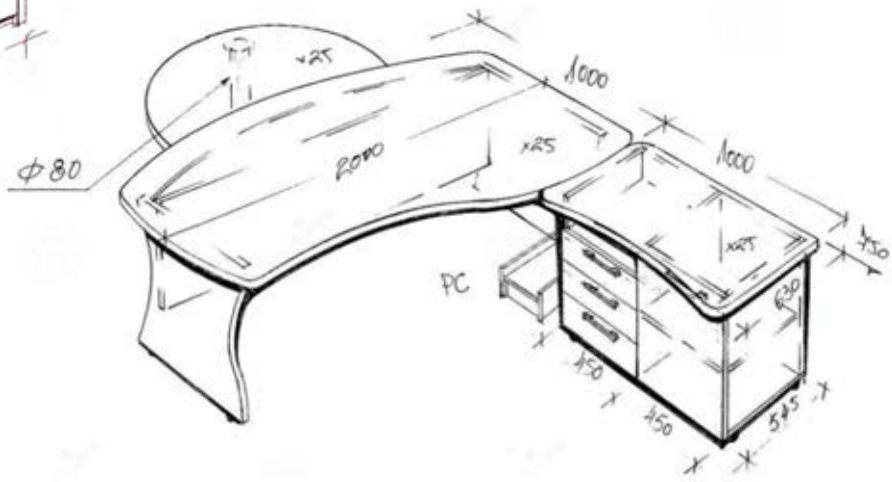
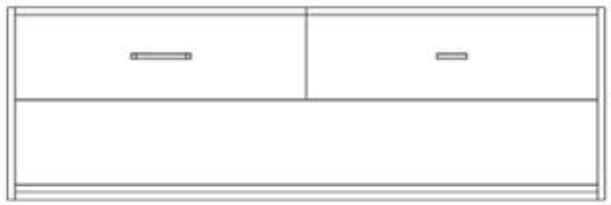
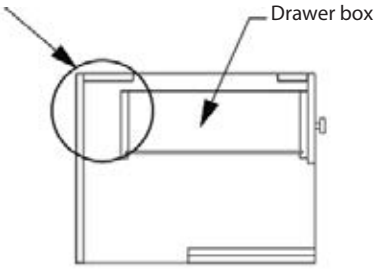


FIGURE B

Please check actual dimension with a drawing provided by manufacturer.
Note: You may NOT have a support frame, please check drawing provided by manufacturer before laying out the top.





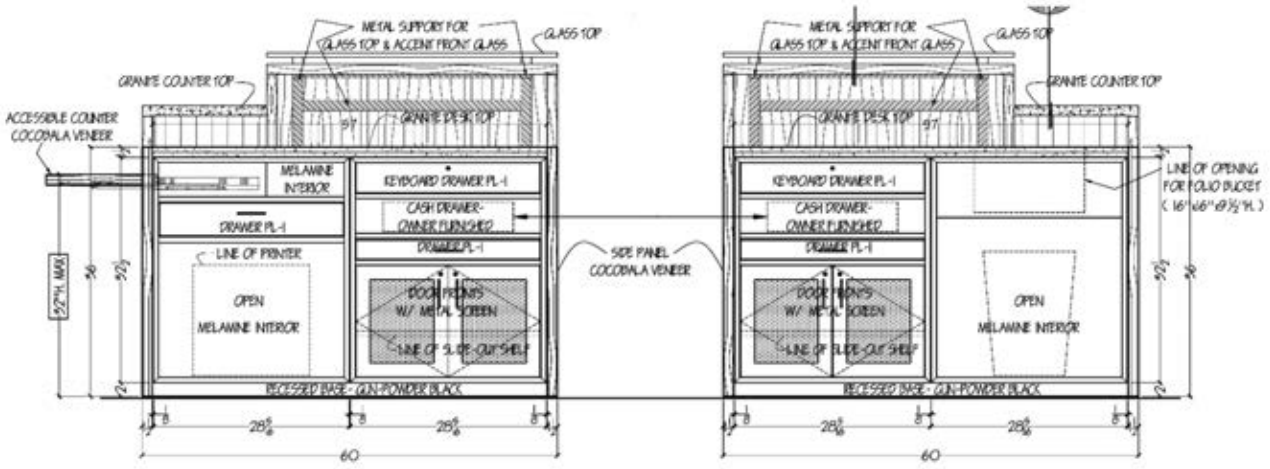
4. Transaction Area Top Layout

a. Reception Desk & Front Desk Pods

As fabricator you have to have a thorough knowledge of the manufacturer's shop drawings of these commercial furniture or cabinets before layout. These spaces may not only be for information but may also have many other functions relating to computer workstations, phones, security box, POS, and security monitoring devices. These multi-function areas are very complicated in terms of layout of the tops, and you will need to exercise caution and attention to detail. Wiring and functionality of devices and electronic equipment may be affected.

Please see FIGURE 'C'

FIGURE C : Front Views



Front Desk Perspective View

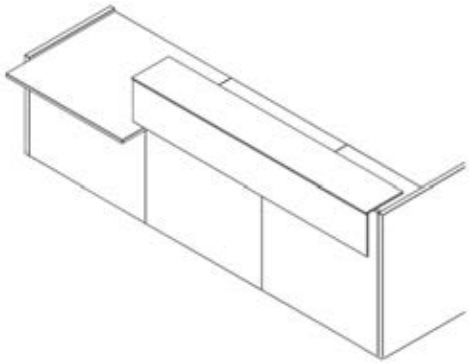
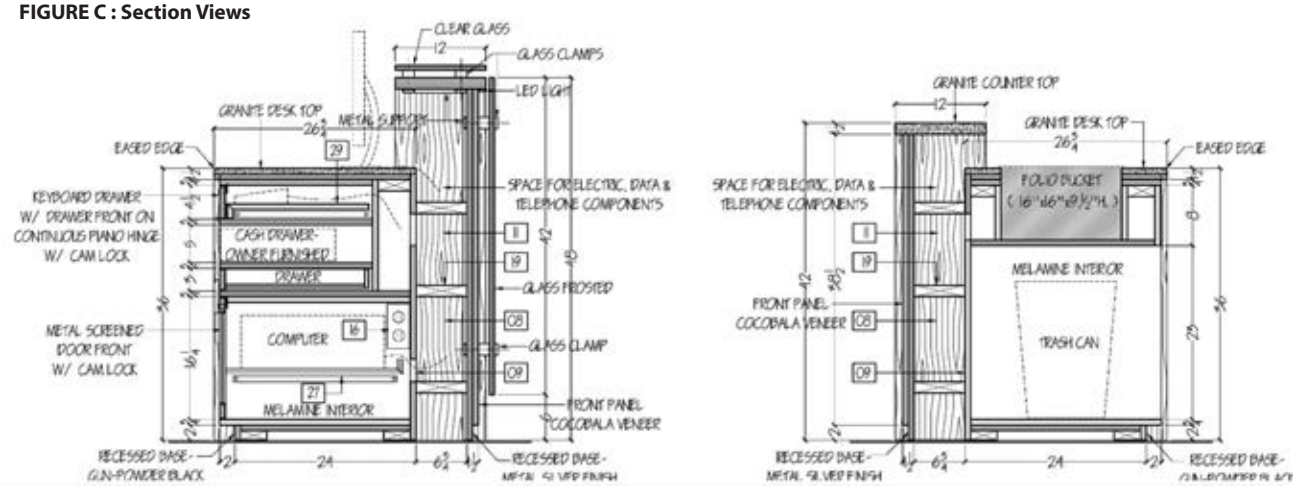


FIGURE C : Section Views



b. Nurse Station & Service Desks

As fabricator we strongly recommend a detailed familiarity with the scope and use of the furniture. Please consult manufacturer's shop drawing and any instructions from supplied manual. The fabricator needs to consider and get full knowledge of any and all electronic devices being used on the space. Medical devices, in particular, are by nature sensitive.

Please install device at least 1 ft. away from medical device to avoid potential interference.

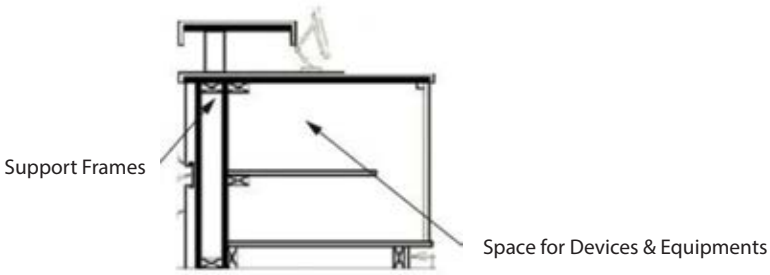
If uncertain, please consult with device manufacturer about any and all recommendations before fabricating in order to avoid issues and problems.

Please see FIGURE 'D'

- Precaution: All electric wiring needs to be done by a licensed electrician. LG Hausys is NOT providing electrical services and will not be held responsible for any additional cost associated with electrical work.
- Prohibited: Do NOT install directly on top of table or desk frames and hardware. Please consult drawing by manufacturer and check actual dimension for proper support.

Note: Please check drawing provided by manufacturer and onsite measurement before laying out the dimensions, because you may have chance to have changes by an installer.

FIGURE D



5. Public & Etc. Area Top Layout

As fabricator we strongly recommend you consider and understand the location of frame support panels, legs, drawer boxes, electric and electronic wiring, and all other factors affecting your layout.

- Precaution: All electric wiring needs to be done by a licensed electrician. LG Hausys is NOT providing electrical services and will not be held responsible for any additional cost associated with electrical work.
- Prohibited: Do NOT install directly on top of table or desk frames and hardware. Please consult drawing by manufacturer and check actual dimensions for proper support.

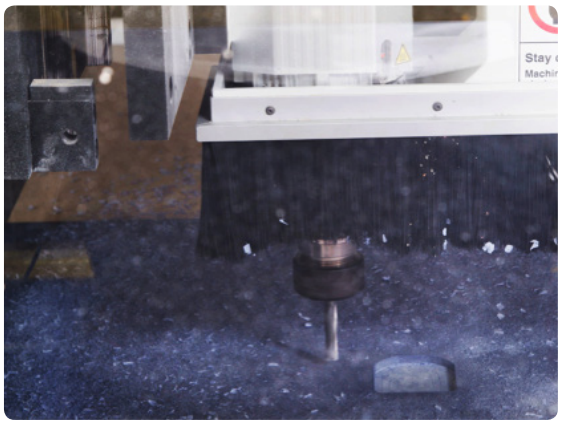
Note: Please check drawing provided by manufacturer and onsite measurement before laying out the dimensions, because you may have chance to have changes by an installer.

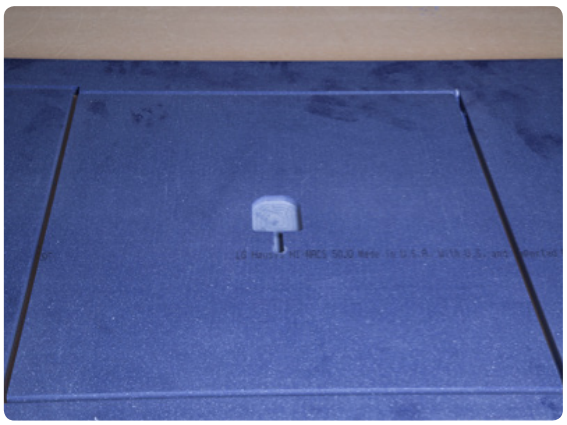
6. Wireless Charging Pad Fabrication Guide for HI-MACS

Wireless Charging Pad Implementation

- Lay down a sheet of HI-MACS on top of CNC with backside facing up.

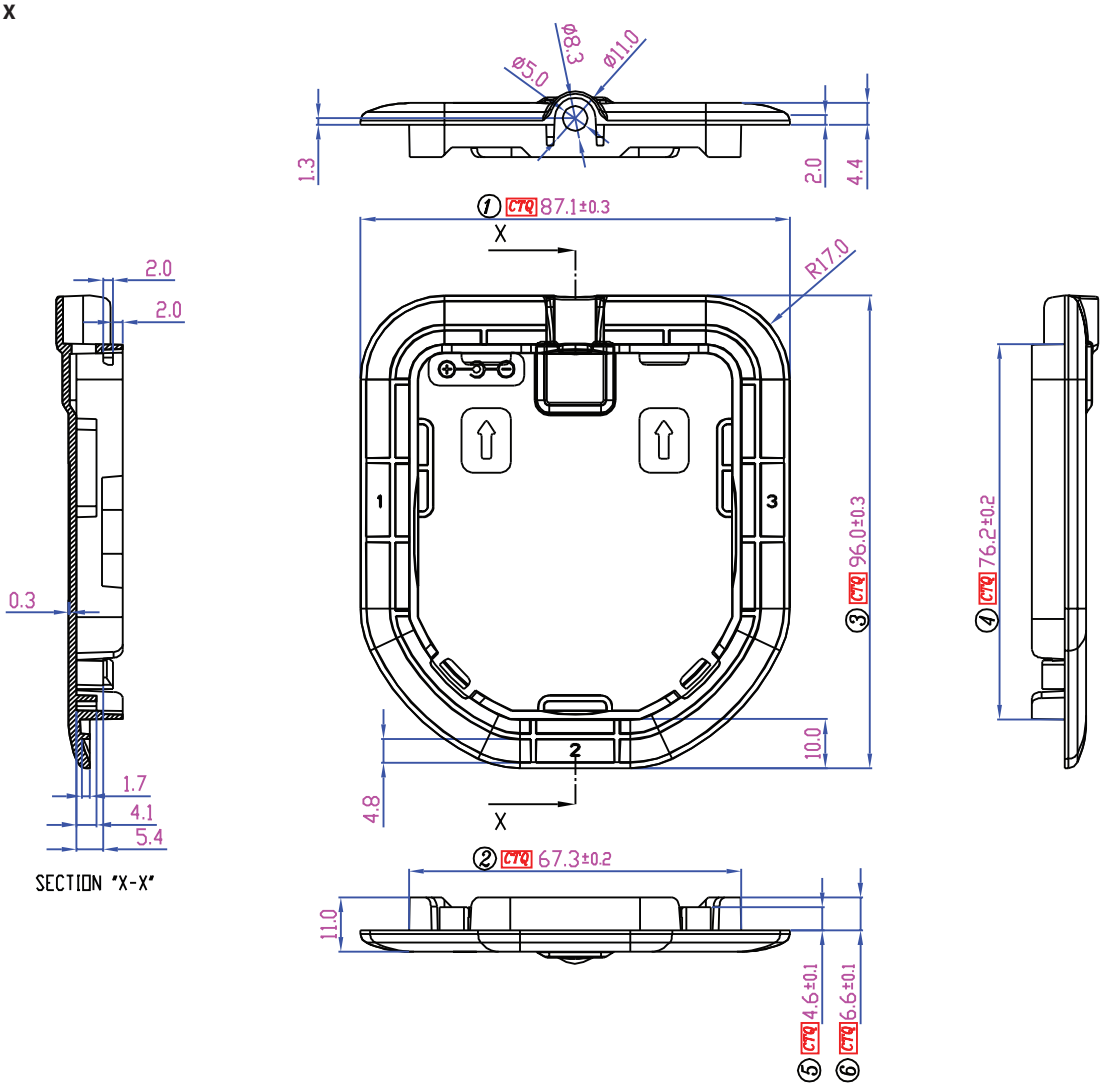
- Using CNC machine, route on the HI-MACS backside to the thickness of 6mm as optimal target or 9mm as maximum thickness from top surface for optimal performance.
- Route on an area that does not interfere with substrate and is easily accessible. Refer back to precautions mentioned under sections in Fabrication Guide depending on the type of top layout.



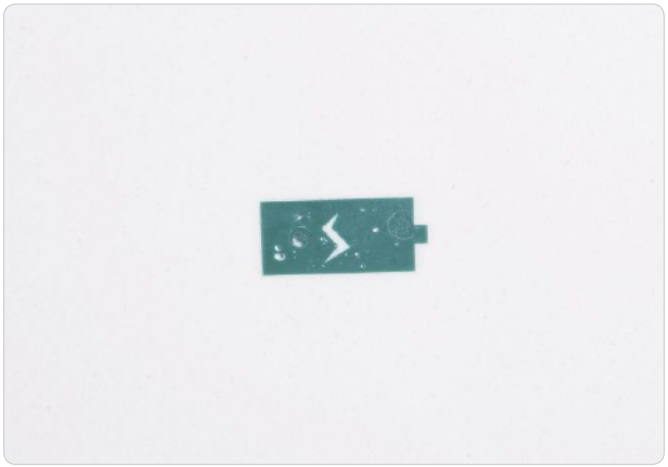


- When using substrate to cover all area on the bottom surface (usual for commercial projects), use following DWG CAD file to route out the substrate. Use the same DWG file as Fig X to route HI-MACS below the substrate for the transmitter.
- Avoid routing where the transmitter comes in contact with water and stream.
- Use the following digital image as input for CNC. DWG CAD file is also available on Website for Download www.LGTechTop.com

FIGURE X



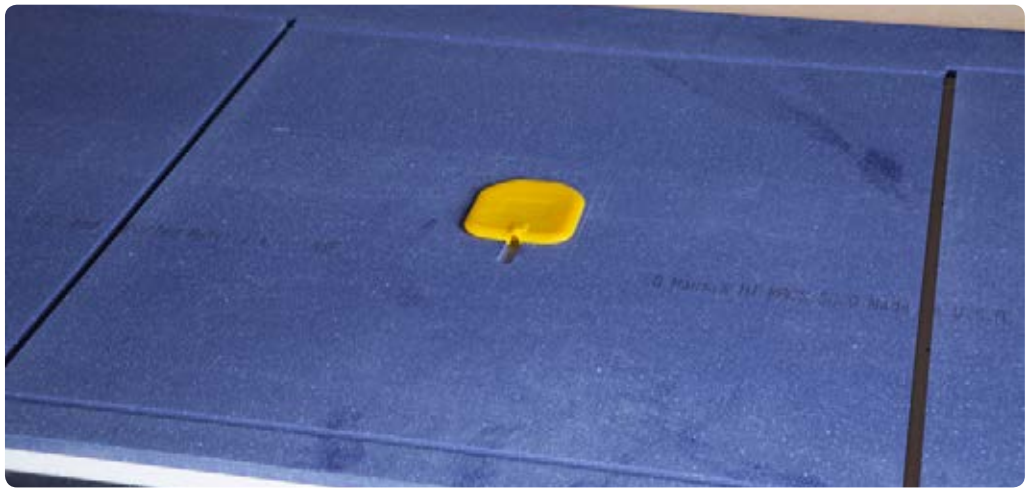
- Place the HI-MACS sheet on CNC with top surface facing up and route the surface down to 3mm for a specific inlay design. When routing, the center of the inlay must be vertically aligned with the center of the coil on the transmitter. This applies only if inlay is requested by customer instead of attaching sticker.



- Fit the transmitter into the bracket with coil facing up towards bottom of the route-out.

- Apply approximately 1 cm^3 of silicon bond on three spots of the bracket. See '5. Bracket dimension' on page 6.

- Do not apply the glue in the center of the coil.
- Place HI-MACS upside down on a flat table and attach the device set (transmitter in the bracket) into the route-out.



- Wait until the bracket is completely glued and attached to the bottom surface.
- After finishing regular fabrication of the countertop, connect AC adaptor to power jack of the transmitter and electrical outlet.
- Check to see if power is on and charging is working properly by simply putting phone with standard Qi receiver to find correct charging spot, located perpendicular to center of the coil.
- Recommend to place minimum 1/2”x1/2” mark to indicate charging area on the center of charger coil.

Frequently Asked Questions

1. What is the charging range of the transmitter?

The maximum charging range of the transmitter is 9 mm with HI-MACS in-between the receiver and the transmitter. It is best recommended to set the range at 6 mm for the best performance.

2. Do I need to plug the transmitter in?

Yes, the transmitter needs to be plugged into a GFCI (Ground Fault Circuit Interrupter) carried electrical outlet.

3. Is the transmitter itself hard wired?

Yes, the transmitter is hard wired with AC adapter.

4. How do I know if my phone is compatible with TechTop?

Visit following link to find out your phone's compatibility with TechTop : www.LGTechTop.com

5. What receiver do I need to purchase for my phone to make it compatible?

Visit following link to find out appropriate receiver for your phone: www.LGTechTop.com
The receivers need to be Qi certified to be compatible with TechTop.

6. Where can I purchase a compatible receiver from?

A compatible receiver can be purchased through Amazon or E-bay. The receiver needs to be Qi certified.

7. How much do receivers cost?

Price for receivers varies by volume. Please contact your LG Hausys representative for details.

8. Will TechTop get warm when it's plugged in, or only when my cell phone is charging on it? If TechTop gets hot:

a. How hot can I expect my countertop to get?
Charging process occurs within 10°C range.
b. Will the heat damage my countertop over time?
No, it will not damage your countertop.
c. Will the unit shut off as a safety precaution? If so, how long can I keep my phone on the unit before it shuts off?
Yes, the unit will shut off as a safety precaution if its temperature goes over 90°C.

9. What is the life expectancy of TechTop?

The life expectancy of the transmitter embedded in TechTop is 5 years similar to ordinary consumer electronics.

10. If my phone doesn't charge when placing it on TechTop, how do I know if it is because of the receiver or the transmitter?

Use the provided receiving unit with light indication to find out which is causing the problem.

11. Will TechTop charge my phone faster than when charging with a cord?

No, it will not charge faster than a cord, but it is as efficient as 90% of charging with a cord.

12. How long will it take to charge my phone with TechTop?

It usually takes 2-3hours to fully charge your phone from empty battery with TechTop.

Frequently Asked Questions

13. How long is the cord that is supplied with TechTop?
5 FT

14. How does TechTop work?
TechTop works by transmitting electromagnetism from the copper coil on the transmitter to a specific receiver for individual phone.

15. Where can I get a copy of the TechTop User Manual?
Please contact techtop@lghausys.com to request a copy of the TechTop User Manual.

16. Who do I call if my unit is having issues?
You can call following number for any technical issue: 1-866-767-9764

17. Will using TechTop disrupt any of my other wireless devices such as internet, home security, etc.?
Using TechTop will not disrupt other wireless devices.

18. Can I use my phone while it's charging?
You can use your phone while it's charging as long as the phone is in an appropriate placement on top of TechTop.

19. Can I charge multiple phones at the same time?
You cannot charge multiple phones at the same time using TechTop.

20. Will TechTop charge other devices like tablets or laptops?
It is not compatible with tablets or laptops but will be available in near future.

21. What is the warranty on TechTop?
1 year warranty is provided for TechTop.

22. Where can I find a troubleshooting guide should I have problems?
You can find a troubleshooting guide in this manual on page 8 section #3.

23. Who do I call when my TechTop isn't working?
See '1. Troubleshooting Instruction" on page 8.

24. What happens when TechTop reaches its life expectancy, do I buy another one?
When TechTop reaches its life expectancy, you may contact LG Hausys authorized dealer or fabricator to replace the old unit to a new one. Please go to www.LGTechTop.com to find the nearest dealer or fabricator.

25. Can I purchase the transmitter for TechTop without having my countertop replaced or fabricated?
You cannot purchase TechTop separately.

26. Does LG Hausys manufacture TechTop?
LG Hausys manufactures the surface material but not the transmitter.

27. Where is TechTop made?
The surface material is made from LG Hausys' plant in the USA, and the transmitter is made in Korea.

Frequently Asked Questions

28. Is TechTop safe for my health?

Yes, TechTop is not harmful as it is FCC certified.

29. What is Qi Standard?

Qi standard is a global wireless charging standard that enable wireless charging among Qi compatible devices. All Qi compatible devices, regardless of manufacturer or brand will charge wirelessly when placed on Qi wireless charging area.

30. With having to route to ¼" will the unit be visible in some colors?

The unit will not be visible in any color with the top routed to ¼" from the bottom.

31. Where can I get the DFX file for fabrication guidelines?

You can download the DFX file from the website: www.LGTechTop.com

32. How is the unit adhered to my countertop, is it screwed in or glued?

A bracket is provided to cover the transmitter from the bottom, which needs to be glued on the bottom surface.