

Platform

Specifications

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OYSMS group

- Specs to be
given :

1.) Platform shape

2.) Platform dimensions

14.) Specs
of each screw
for threaded
hole group

3.) Material of platform

4.) # of threaded holes

15.) Components
that will be
mounted onto
platform

5.) # through holes

6.) # Non-through holes

7.) Position of threaded holes

8.) Position of through holes

9.) Position of non through holes

10.) depth of threaded holes

11.) depth of through holes

12.) depth of ^{Non} through holes

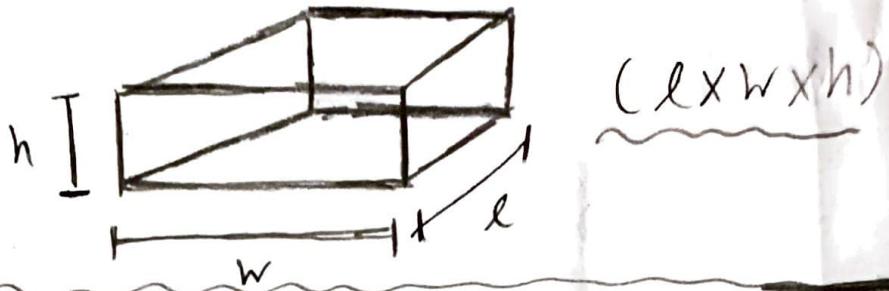
13.) groups of threaded holes

This along with a

Solid Works

drawing will be provided for Platform

1.) Platform shape will be a rectangular prism



2.) Platform dimensions

$$(l \times w \times h) = (190\text{mm} \times 145\text{mm} \times 10\text{mm})$$

$$(\text{inches}) = (7.48\text{in} \times 5.70\text{in} \times 0.393\text{in})$$

Note: h has a range of values
(10mm ideal)

$10\text{mm} < h < 20\text{mm}$
(anywhere in this range is fine)

3.) Material of platform

choose the material highest in ranking and available in dimension we above:

* Here is a ranking of materials. *Any color but transparent is fine

1.) ABS Acrylonitrile Butadiene Styrene (ABS)

2.) Polycarbonate (PC)

3.) PVC Polyvinyl Chloride

4.) If above 3 not available any opaque plastic will be fine

Ex: 1 unavailable
2 available
3 available
4 available

2.) PC will be used

4.) # Threaded holes = 22 threaded holes

5.) # Through holes = 1

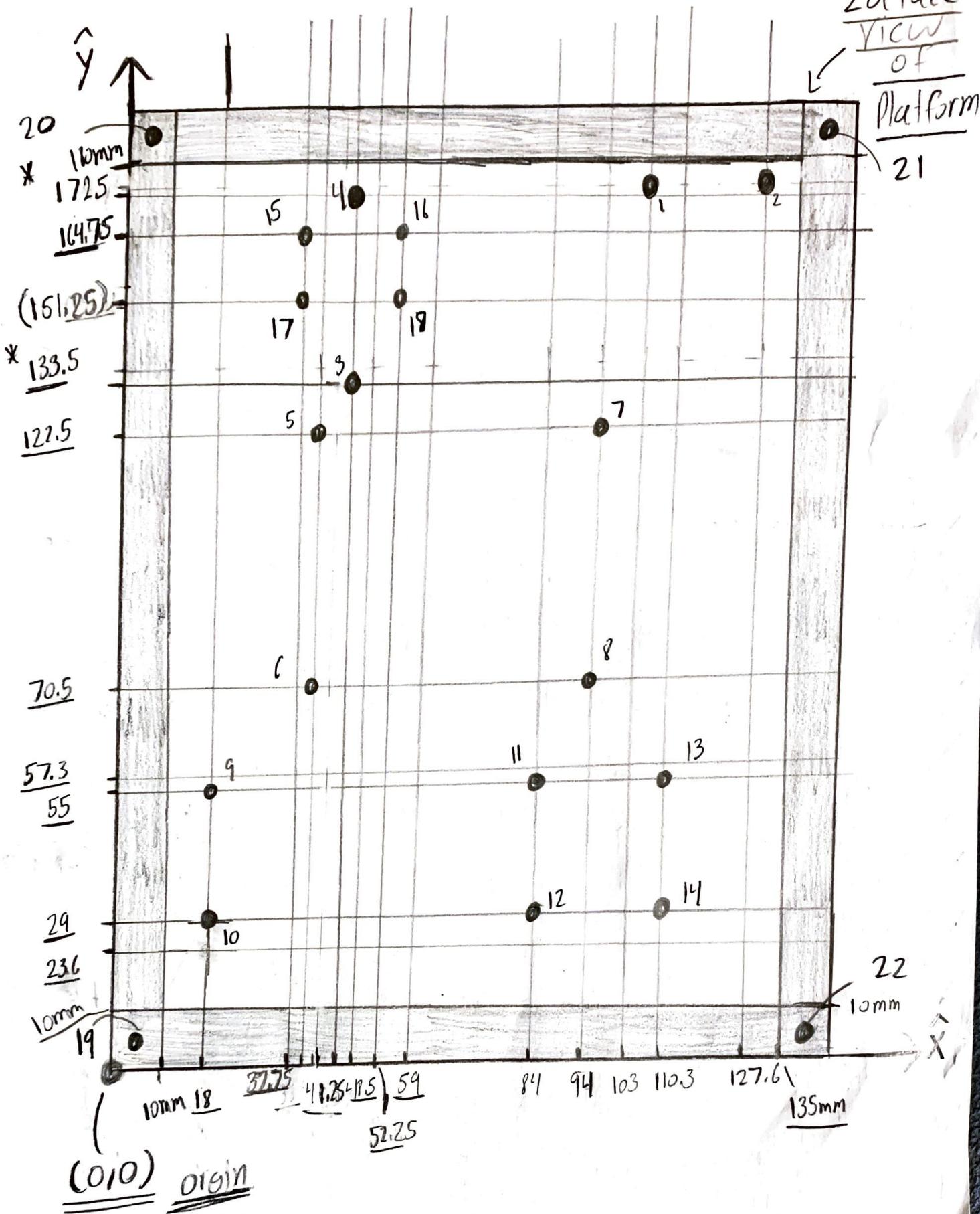
6.) # Non-Through holes = 1

7.) Positions of Threaded holes

(Next page is
a diagram 2d view.)

	(mm)	(in)	
\ Pos screw1	(103, 172.5)	(4.05, 6.79)	Pos screw15
\ Pos screw2	(127.6, 172.5)	(5.023, 6.79)	(32.75, 14.75) (1.289, 0.6486)
\ Pos screw3	(44.25, 135.5)	(1.742, 5.26)	Pos screw16
\ Pos screw4	(44.25, 174.5)	(1.742, 6.79)	(52.25, 14.75)
\ Pos screw5	(38, 122.5)	(1.496, 4.822)	(2.057, 0.6486)
\ Pos screw6	(38, 70.5)	(1.496, 2.775)	Pos screw17
\ Pos screw7	(194, 122.5)	(4.05, 4.822)	(32.75, 151.25) (1.289, 5.9541)
\ Pos screw8	(94, 70.5)	(3.700, 2.775)	Pos screw18
\ Pos screw9	(18, 55)	(0.708, 2.165)	(52.25, 151.25) (2.057, 5.954)
\ Pos screw10	(18, 29)	(0.708, 1.141)	Pos screw19-22
\ Pos screw11	(84, 55)	(3.307, 2.165)	19. (5, 5), (0.196, 0.196)
\ Pos screw12	(84, 29)	(3.307, 1.141)	20. (5, 185), (0.196, 7.213)
\ Pos screw13	(110.3, 55)	(4.342, 2.165)	21. (140, 15), (5.511, 0.196)
\ Pos screw14	(110.3, 29)	(4.342, 1.141)	22. (140, 185), (5.511, 7.213)

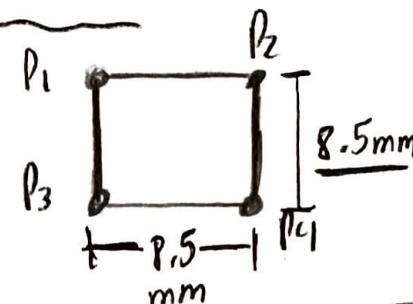
2d face
view
of
Platform



8.) Position of through holes

through hole: $8.5 \times 8.5\text{mm}$

$\{P_1, P_2, P_3, P_4\}$



9.) Position of non through hole 91

Non through hole $32 \times 30\text{mm}$

$\{q_1, q_2, q_3, q_4\}$

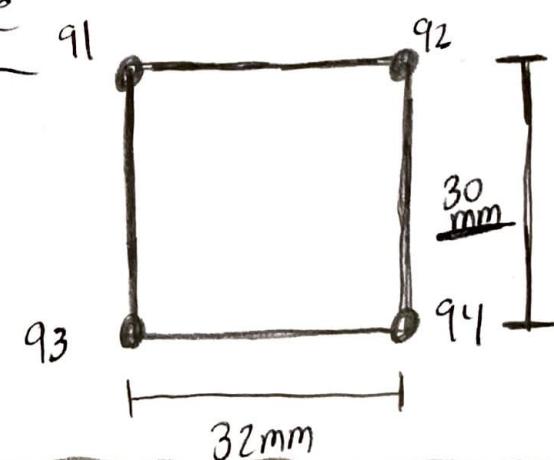


Diagram of
through and nonthrough
hole on next page

$$q_1 = (28, 170), (1.102, 6.692)$$

$$q_2 = (60, 170), (2.362, 6.692)$$

$$q_3 = (28, 140), (1.102, 5.511)$$

$$q_4 = (60, 140), (2.362, 5.511)$$

(mm)

(in)

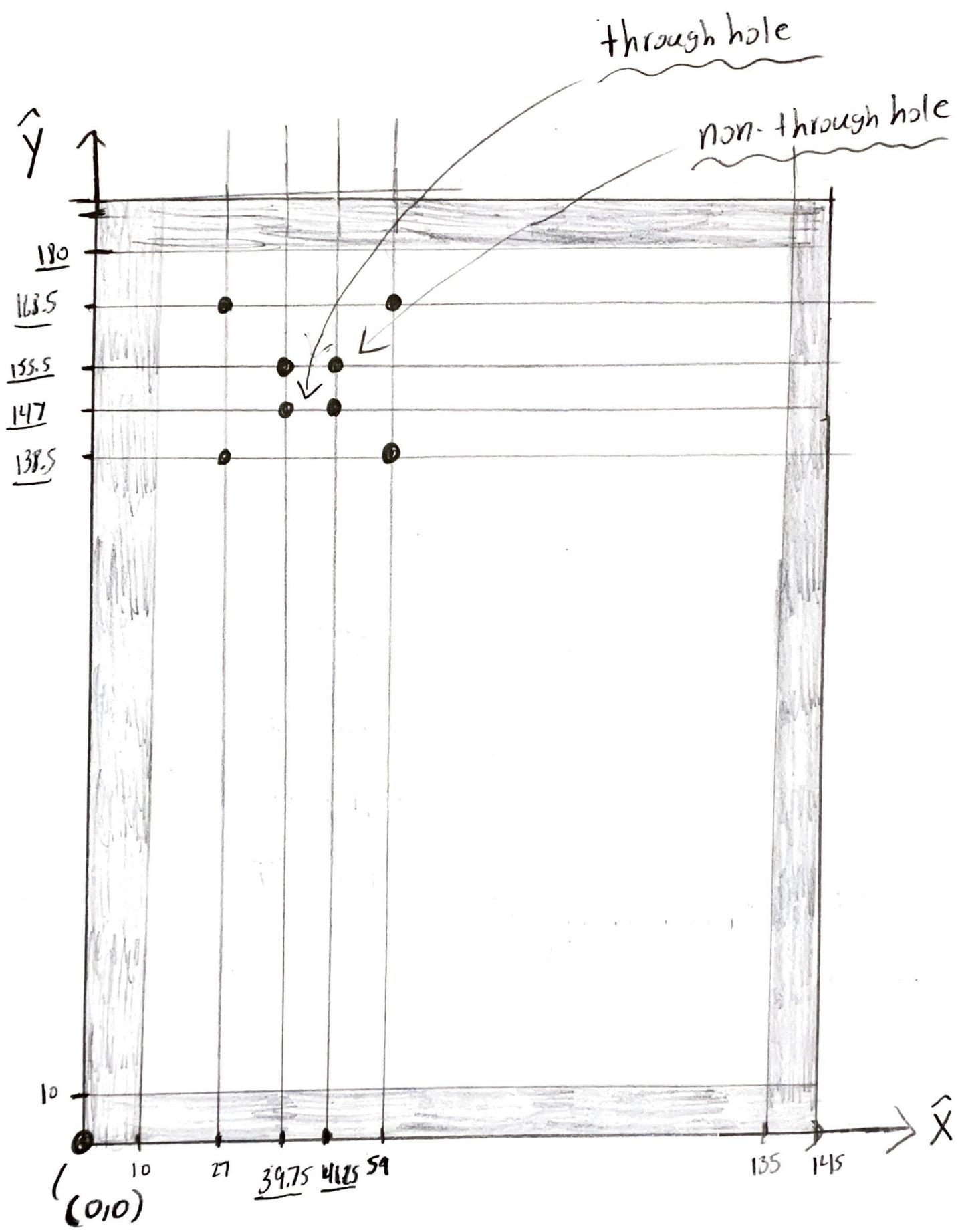
$$P_1 = (39.75, 157), (1.565, 6.181)$$

$$P_2 = (48.25, 157), (1.90, 6.181)$$

$$P_3 = (39.75, 147), (1.565, 5.787)$$

$$P_4 = (48.25, 147), (1.90, 5.787)$$

(mm) (in)



10.) depth of threaded holes

$\{1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14\}$ screws
 will all have a depth of $(\underline{8mm})$

$\{15, 16, 17, 18\}$ will all have a depth of
 $(\underline{4mm})$, they will go straight through platform

$\{19, 20, 21, 22\}$ will all have a depth
 of $(\underline{8mm})$

11.) depth of through hole

The single through hole in platform is 4mm down:
 side view



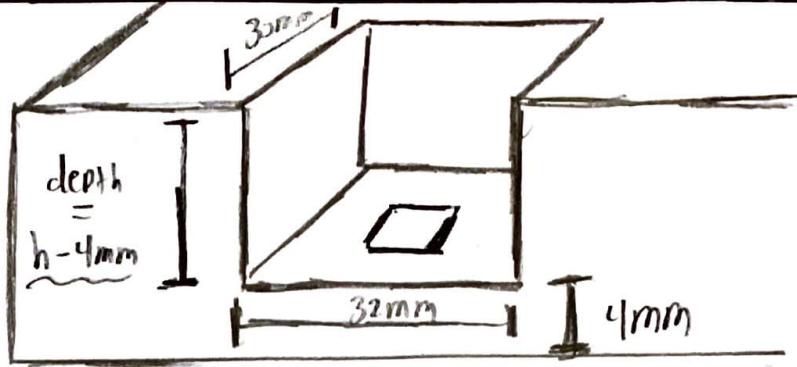
12.) Depth of (non through hole)

This will depend on the height of the platform

$$10 < h < 20, \quad h - \text{depth} = 4\text{mm}, \quad h - 4\text{mm} = \text{depth}$$

Ex: $h = 12\text{mm}$, ($\text{depth} = 12\text{mm} - 4\text{mm} = 8\text{mm}$)

* diagram of
non-through hole
(side view of)
platform



13.) Groups of threaded holes.

Many of the threaded holes share the same screw and we will give the groups that do:

\ group1 { 3, 4, 13, 14 }

\ group2 { 1, 2, 3 }

\ group3 { 5, 6, 7, 8, 19, 20, 21, 22 }

group4 { 9, 10, 11, 12, 15, 16, 17, 18 }

4 types of screws

Vary mainly in thread length and thread diameter

14.) Screw specs for each group of threaded holes:

(Isometric screws)

group 1: M3

thread
diameter = 3mm

thread length

= 12mm

Thread pitch

= 0.5mm

drive system

Phillips

group 2:

M3

thread
diameter = 3mm

thread length

= 20mm

Thread

pitch

= 0.5mm

drive system

Phillips

(Isometric screws)

group 3:

M3

thread
diameter = 3mm

thread
length

= 8mm

thread
pitch

= 0.5mm

drive system

Phillips

(Isometric screws)

group 4:

M2

thread
diameter = 2mm

thread
length

= 8mm

thread pitch

= 0.4mm

drive system Phillips

(Isometric screws)

Links to all the screws will be provided
on next page of document

15.) components that will be mounted onto platform:

1.) Raspberry Pi 4B microcontroller

2.) Proto board for circuit connections

3.) Transmitter module, mount

4.) camera module, mount

5.) Antenna and Mount

6.) A cover to seal/enclose platform
and components;

(Some or all components can be provided
for reference in making platform)

images provided on next page to show
idea of how Platform will be used

Links to the screws for each group:

Group 1 link)

[https://www.amazon.com/Uxcell-a15070200ux0058-Stainless-Phillips-Screws/dp/B012TE1TBS/
ref=asc_df_B012TE1TBS/?tag=hyprod-20&linkCode=df0&hvadid=198079933338&hvpos=&hvnetw
=g&hvrand=11259763086637681005&hvpone=&hvptwo=&hvqmt=&hvdev=c&hvdvcmdl=&hvlocin
t=&hvlocphy=9028088&hvtargid=pla-351118719595&psc=1](https://www.amazon.com/Uxcell-a15070200ux0058-Stainless-Phillips-Screws/dp/B012TE1TBS/ref=asc_df_B012TE1TBS/?tag=hyprod-20&linkCode=df0&hvadid=198079933338&hvpos=&hvnetw=g&hvrand=11259763086637681005&hvpone=&hvptwo=&hvqmt=&hvdev=c&hvdvcmdl=&hvlocint=&hvlocphy=9028088&hvtargid=pla-351118719595&psc=1)

Group 2 link)

[https://www.amazon.com/Prime-Line-9131066-Machine-Phillips-Stainless/dp/B07D5S55QC/
ref=asc_df_B07D5S55QC/?tag=hyprod-20&linkCode=df0&hvadid=416961890636&hvpos=&hvnetw
=g&hvrand=1811148170060651823&hvpone=&hvptwo=&hvqmt=&hvdev=c&hvdvcmdl=&hvlocin
t=&hvlocphy=9028088&hvtargid=pla-870103602430&psc=1&tag=&ref=&adgrpid=96633979089
&hvpone=&hvptwo=&hvadid=416961890636&hvpos=&hvnetw=g&hvrand=18111481700606518
23&hvqmt=&hvdev=c&hvdvcmdl=&hvlocint=&hvlocphy=9028088&hvtargid=pla-870103602430](https://www.amazon.com/Prime-Line-9131066-Machine-Phillips-Stainless/dp/B07D5S55QC/ref=asc_df_B07D5S55QC/?tag=hyprod-20&linkCode=df0&hvadid=416961890636&hvpos=&hvnetw
=g&hvrand=1811148170060651823&hvpone=&hvptwo=&hvqmt=&hvdev=c&hvdvcmdl=&hvlocin
t=&hvlocphy=9028088&hvtargid=pla-870103602430&psc=1&tag=&ref=&adgrpid=96633979089
&hvpone=&hvptwo=&hvadid=416961890636&hvpos=&hvnetw=g&hvrand=18111481700606518
23&hvqmt=&hvdev=c&hvdvcmdl=&hvlocint=&hvlocphy=9028088&hvtargid=pla-870103602430)

Group 3 link)

[https://www.amazon.com/Uxcell-a15121600ux0534-Stainless-Phillips-Machine/dp/B01BBOZGK
C/ref=asc_df_B01BBOZGKC/?tag=hyprod-20&linkCode=df0&hvadid=198079933338&hvpos=&
hvnetw=g&hvrand=16066372967582206811&hvpone=&hvptwo=&hvqmt=&hvdev=c&hvdvcmdl=
&hvlocint=&hvlocphy=9028088&hvtargid=pla-348288293182&psc=1](https://www.amazon.com/Uxcell-a15121600ux0534-Stainless-Phillips-Machine/dp/B01BBOZGK
C/ref=asc_df_B01BBOZGKC/?tag=hyprod-20&linkCode=df0&hvadid=198079933338&hvpos=&
hvnetw=g&hvrand=16066372967582206811&hvpone=&hvptwo=&hvqmt=&hvdev=c&hvdvcmdl=
&hvlocint=&hvlocphy=9028088&hvtargid=pla-348288293182&psc=1)

Group 4 link)

[https://www.amazon.com/MroMax-Machine-Cabinet-Stainless-Phillips/dp/B07YCCMSMJ/
ref=sr_1_13?crid=8446S4IQ1JX7&keywords=m2+8mm+screws&qid=1679545919&s=industrial&spref
ix=m2+8mm+screws%2Cindustrial%2C91&sr=1-13](https://www.amazon.com/MroMax-Machine-Cabinet-Stainless-Phillips/dp/B07YCCMSMJ/ref=sr
_1_13?crid=8446S4IQ1JX7&keywords=m2+8mm+screws&qid=1679545919&s=industrial&spref
ix=m2+8mm+screws%2Cindustrial%2C91&sr=1-13)

Image for idea on how platform will be used:

