

CATALOG 2023



Customized graphene-based electrode
custom-made for your research

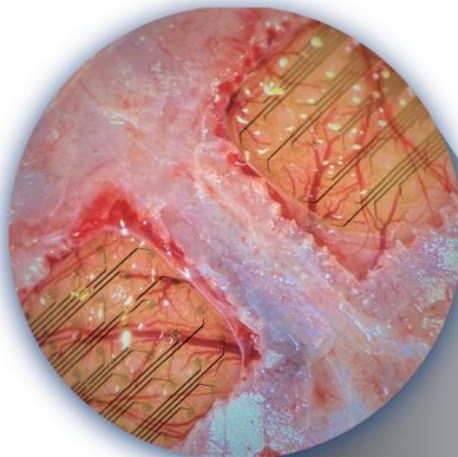
Phin Array™



Phin Array™ is our graphene-based thin cortical surface electrode array, fully customizable for your brain recording and stimulation research.

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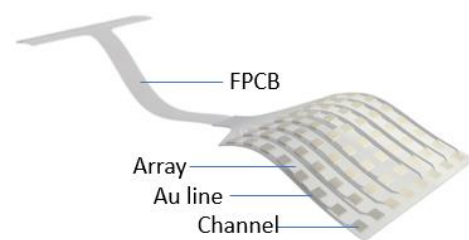










A. How to order standard Phin Arrays

Please send us an email with the following information at info@gbrainlife.com

1. Select the model (channel & size)

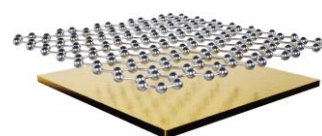
Refer to p. 6-13 for specific dimensions



List No.	Number of channels	Channel size (mm)	Array size (mm)	Brain coverage (mm)	Model name (#ch-Array size)	Example brain ROIs	Array image
1	32	0.10x0.10	1.25x1.50	1.52x3.00	32-1.25x1.50	Auditory (mouse)	 p. 7
2	32	0.15x0.15	2.90x2.90	3.66x3.60	32-2.90x2.90	Somatosensory (mouse)	 p. 8
3	32	0.25x0.25	5.50x5.50	6.00x6.00	32-5.50x5.50	Somatosensory (rat)	 p. 9
4	32	0.15x0.15	1.86x7.87	2.90x8.68	32-1.86x7.87-R	Motor (rat)	 p. 10
5	32	0.15x0.15	1.86x7.87	2.90x8.68	32-1.86x7.87-L	Motor (rat)	 p. 11
6	32	0.40x0.40	8.40x8.35	10.00x9.47	32-8.40x8.35	Motor (pig)	 p. 12
7	64	0.15x0.15	5.57x5.57	5.77x5.89	64-5.57x5.57	Somatosensory (rat)	 p. 13
8	32	10.0x10.0	15.0x25.0	16.0x30.5	32-15.0x25.0	Motor (monkey)	 p. 14

2. Select the channel material

- ☐ Au (\$500)
-plain gold
- ☐ Gr (\$550)
-graphene-gold layer

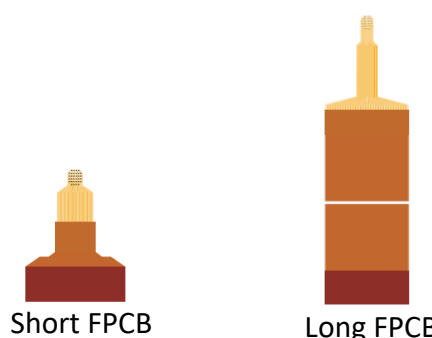


Graphene-gold layer
(graphene faces the brain cortex)

3. Select the FPCB (flexible printed circuit board) length

Refer to p. 6-12 for specific dimensions

- ☐ Short
- ☐ Long
- ☐ Custom length
-any length between 5mm-20mm



B. How to order custom Phin Arrays

Please send us an email with the following information at info@gbrainlife.com

1. Inform us about your target animal

So that we can provide you with a rough scope of electrode dimension and number of channels

2. Inform us about your data acquisition system if you have any

So that we can design the connecting part of the FPCB

3. Inform us about your animal experiment briefly

So that we can suggest you the optimal FPCB length, along with the overall design of the electrode

4. Inform us about what channel material you would like to use

We offer two options: Au (plain gold, \$500) and Gr (graphene-gold layer, \$550)

We will review your information confidentially and provide personalized order suggestions within **three business days**.

The following **customizable features** of Phin Arrays will be further discussed via email:

- Array dimensions (length & width)
- Number of channels
- Channel dimensions (length & width)
- Au line length
- FPCB length



C. Price (valid until 2023)

1. Price per one Phin Array

Regardless of array size, the price depends on **the number of channels** (32 or 64) and the **channel materials** (Au or Gr).

Array type	32 channel	64 channel
Au (gold)	\$500	\$600
Gr (graphene-gold)	\$550	\$650

Product price per one Phin Array

*Handling and shipping fee are excluded, all prices in USD

2. Minimum order quantity

Minimum order quantity of any item is **two**. You can order two or more Phin Arrays per order.

Array type	32 channel	64 channel
Au (gold)	\$1,000	\$1,200
Gr (graphene-gold)	\$1,100	\$1,300

Minimum order value per order

*Handling and shipping fee are excluded, all prices in USD

*For example, you may order two 32-channel Au model (\$1,000) and three 64-channel Gr model (\$1,950) at the same time.

*However, you may not order one 32-channel Au model (\$500) and one 32-channel Gr model (\$550) at the same time since the number of each item is less than two.

D. Volume discount

We offer discounts for orders that are purchasing **10 or more Phin Arrays**. The discount rate will be further discussed via email.

E. Wireless transmission system compatible with Phin Array (optional)

1. Low-Power Neuro-telemetry and Stimulation Device for Phin Array

Specifications

- Control and Monitor GUI (Windows PC)
- Recording: 16-bit 16/32-Ch. Differential Amp. (BPF 0.1 Hz ~ 4 kHz)
- Stimulation: 3-Ch. / Pulse Current Source (up to 500 uA)
- Wireless Data Transmission via Bluetooth (BW 2 Mbits/s)
- 3.7 V Battery-Powered (External)

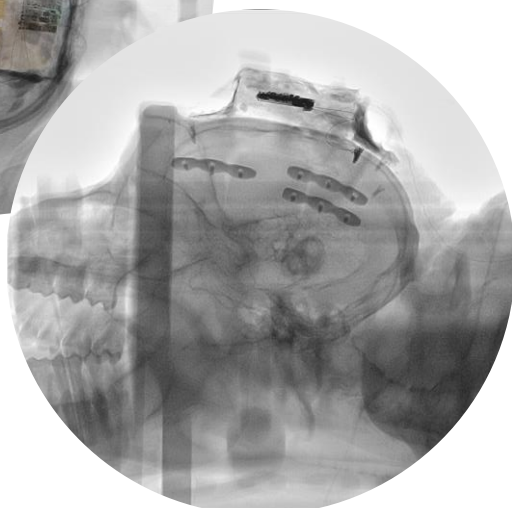
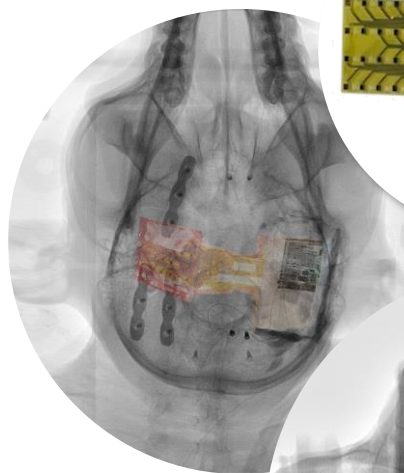
For further details and purchase request, please send us an email at info@gbrainlife.com

Wireless transmission system prototype

for large animals



for small animals



F. Electrode array specifications

Product name: Phin Array™

Specifications:

● Array

Dimension: Varies by design. [Customizable](#)

Thickness (Standard): 9.2μm

Substrate materials: Polyimide

Coating materials: SU-8 2000 series

● Au line

Materials: Gold

Length: Varies by design. [Customizable](#)

● Channel

Dimension: Varies by design. [Customizable](#)

Materials: Gold or graphene-gold

Count: 32 or 64. [Customizable](#)

● FPCB (flexible printed circuit board)

FPCB thickness: 113.5μm

FPCB Length (Standard): 1cm or 10cm. [Customizable](#) (Min: 1cm~Max: 20cm)

FPCB width: Varies by design.

Stiffener thickness: 200μm

● Compatibility with other components

Compatible Connector: CN32 (32-channel), CN64 (64-channel)

Compatible Jumper wire: 1ea x JW32 (32-channel), 2ea x JW32 (64-channel)

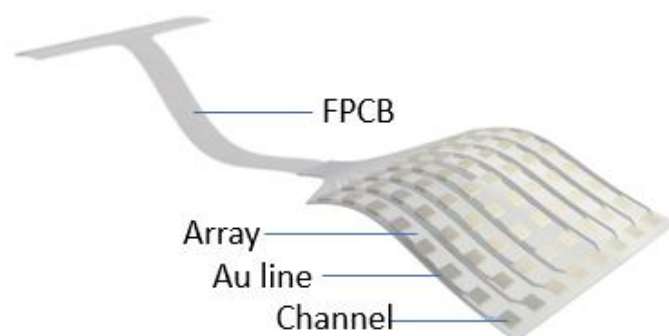
● Storage

Keep in a cool and dry place away from humidity and direct sunlight.

Recommendation: Stored in a Vacuum Desiccator

Rinse: With Distilled (Deionized) water and 70% IPA

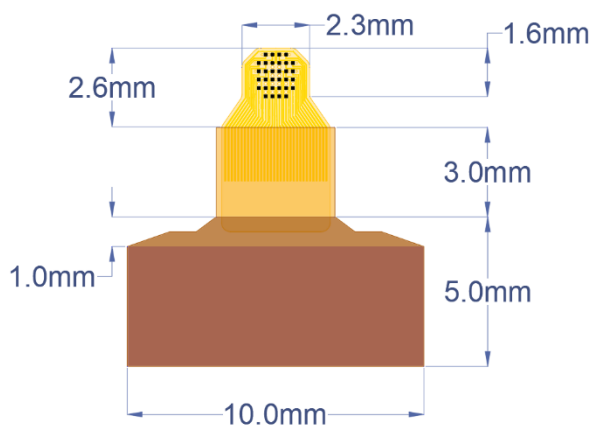
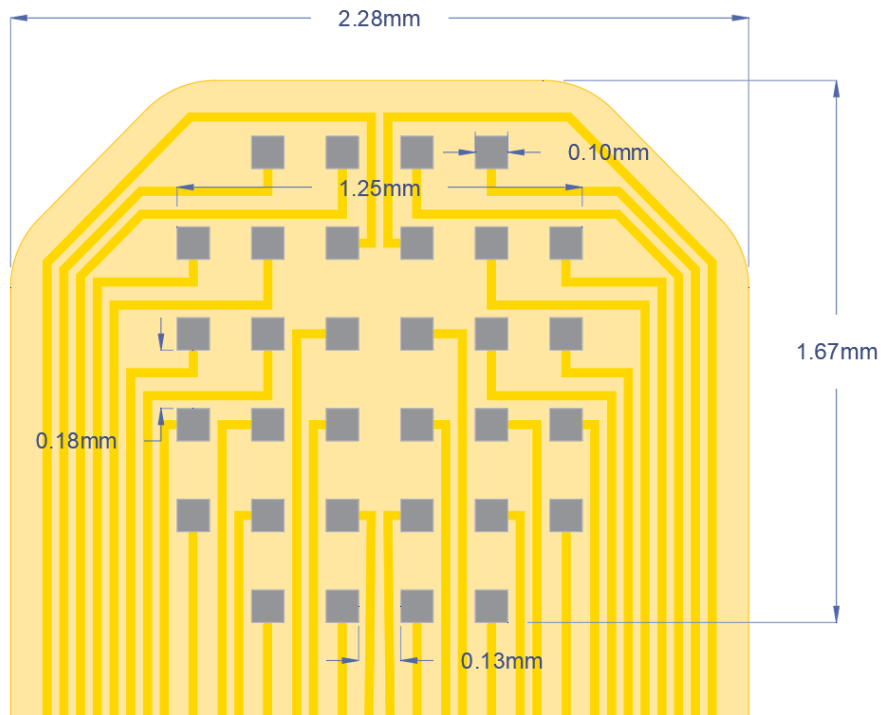
Autoclavability: O



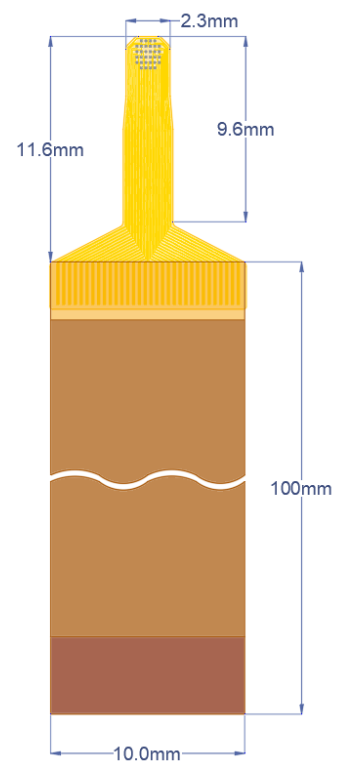
Product details:

List No. 1

Model name: 32-1.25x1.50

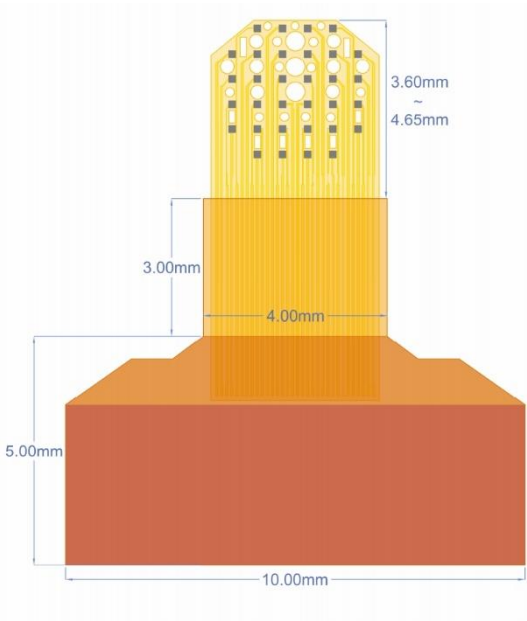
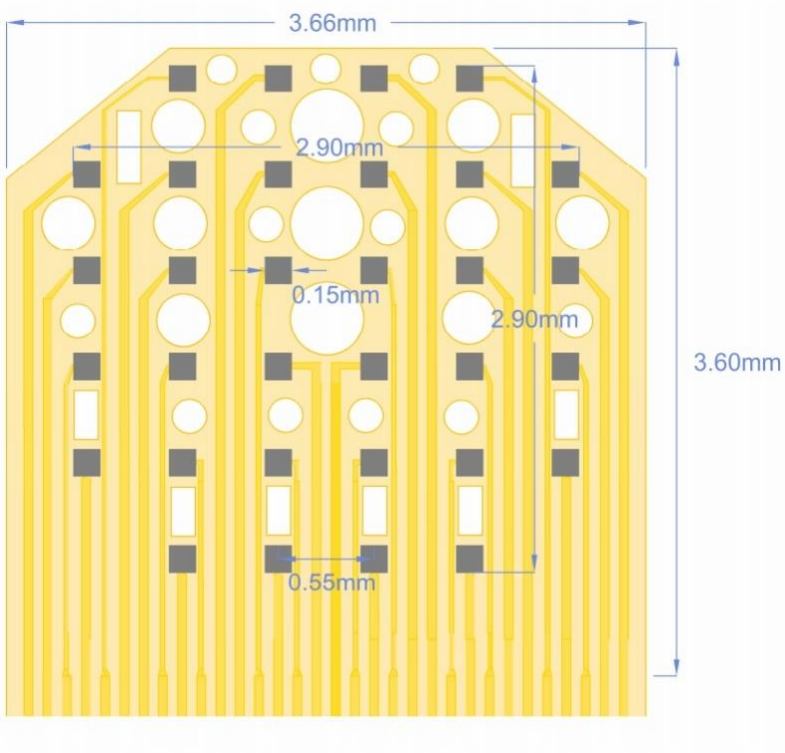


Short FPCB

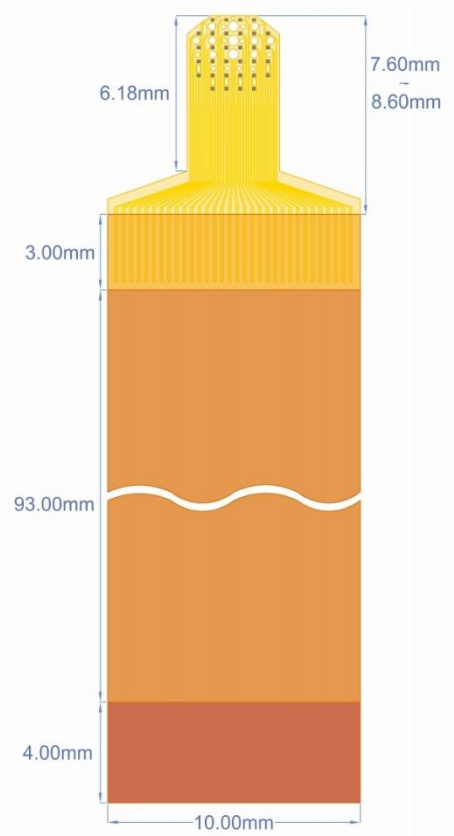


Long FPCB

Model name: 32-2.90x2.90

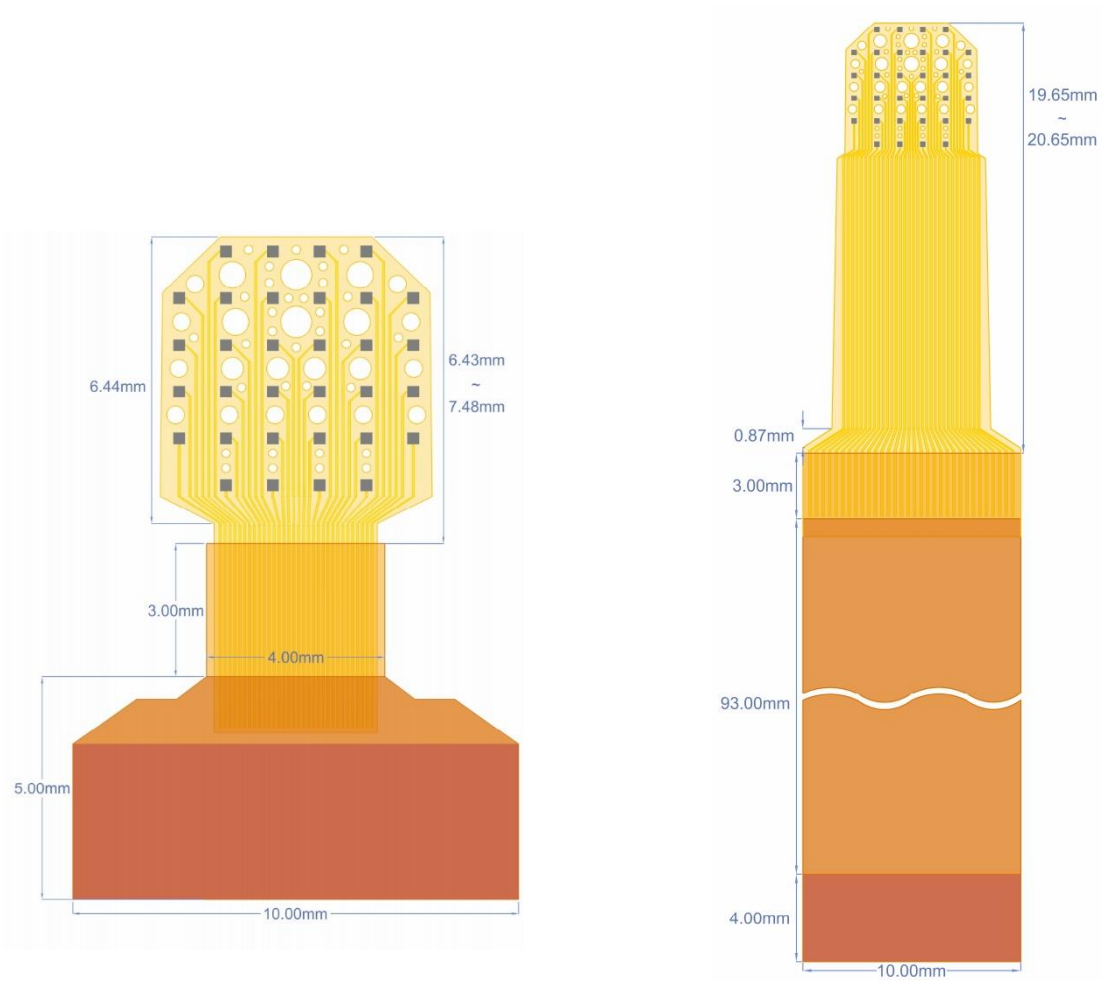
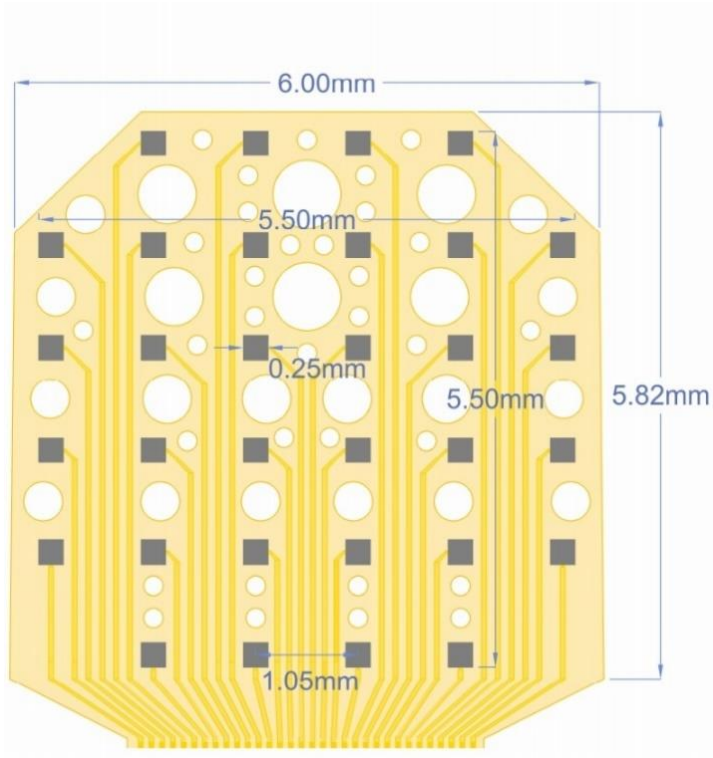


Short FPCB



Long FPCB

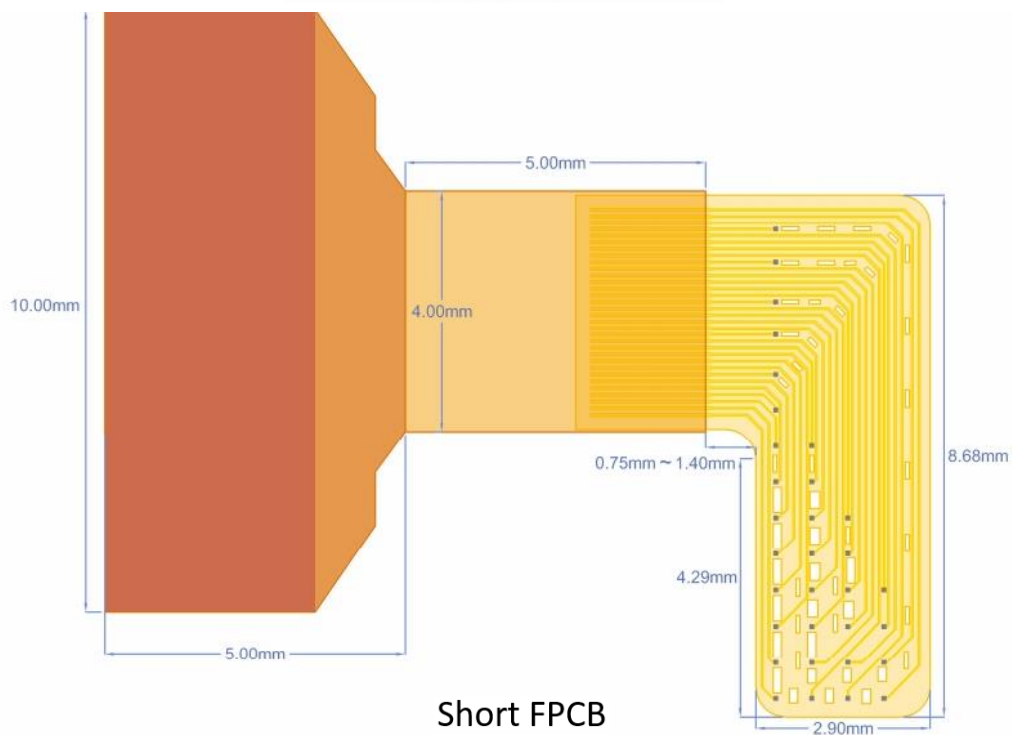
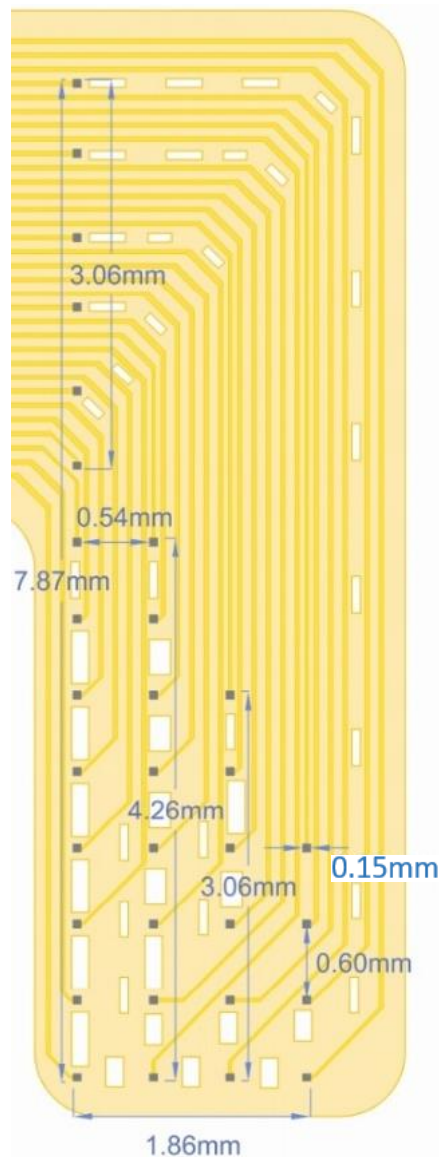
Model name: 32-5.50x5.50



Short FPCB

Long FPCB

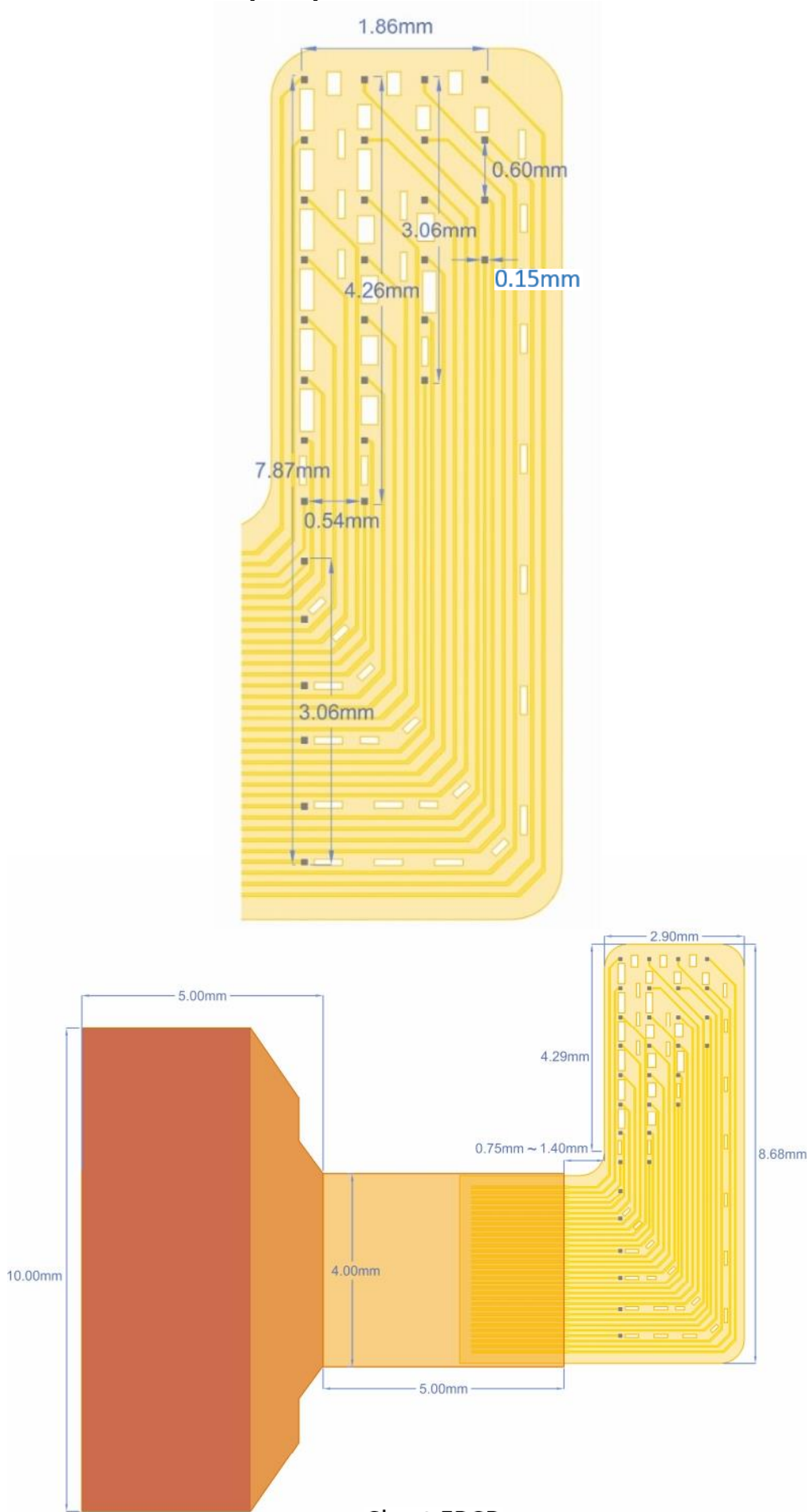
Model name: 32-1.86x7. 87-R (Right)



Short FPCB

Long FPCB also available

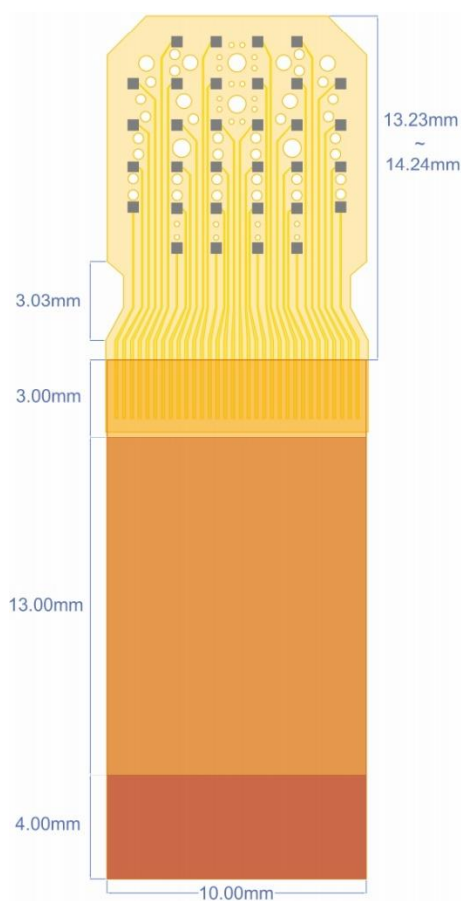
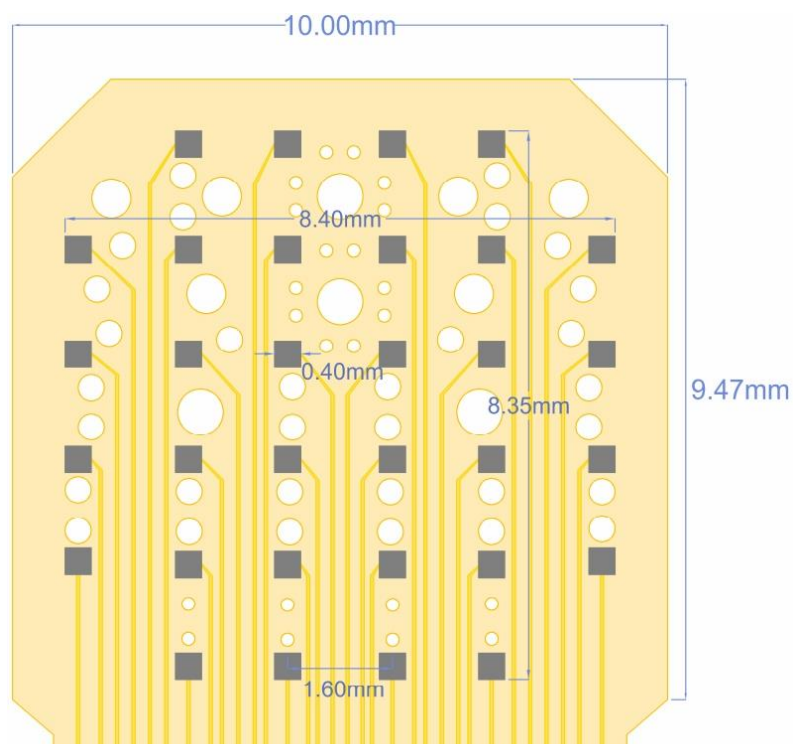
Model name: 32-1.86x7.87-L (Left)



Short FPCB

Long FPCB also available

Model name: 32-8.40x8.35

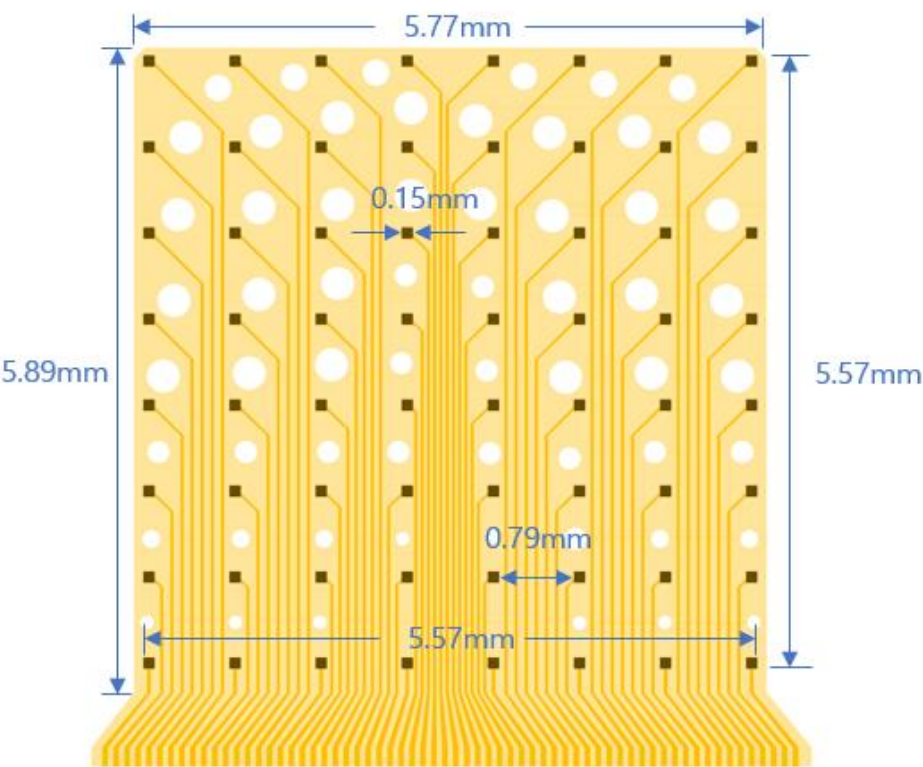


Long FPCB

Short FPCB also available

List No. 7

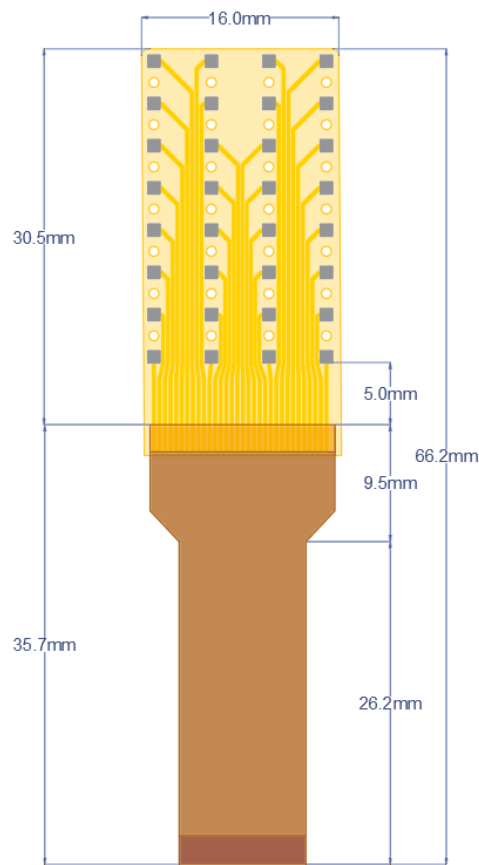
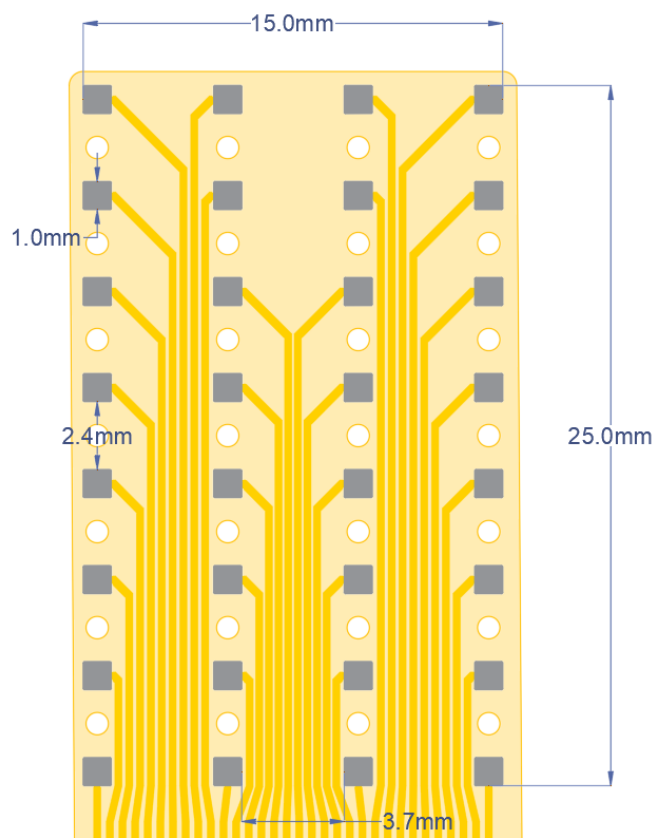
Model name: 64-5.57x5.57



Long FPCB

Short FPCB also available

Model name: 32-15.0x25.0



Long FPCB

Short FPCB also available