



Antenna Front End Solutions for Mobile & Wearable Device

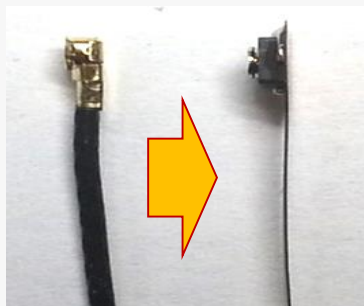


FRC (FPCB RF Cable)



- Flat RF transmission line made of FPCB that can **fully replace conventional micro coaxial cable**
- Better solution for slim mobile device and wearable device due to **its design flexibility**

Maximize space utilization



Coaxial
Cable
0.64mm

FRC
0.25mm

**Thinner
structure**

Various connection methods

Connector

Solder

SMT

C-Clip



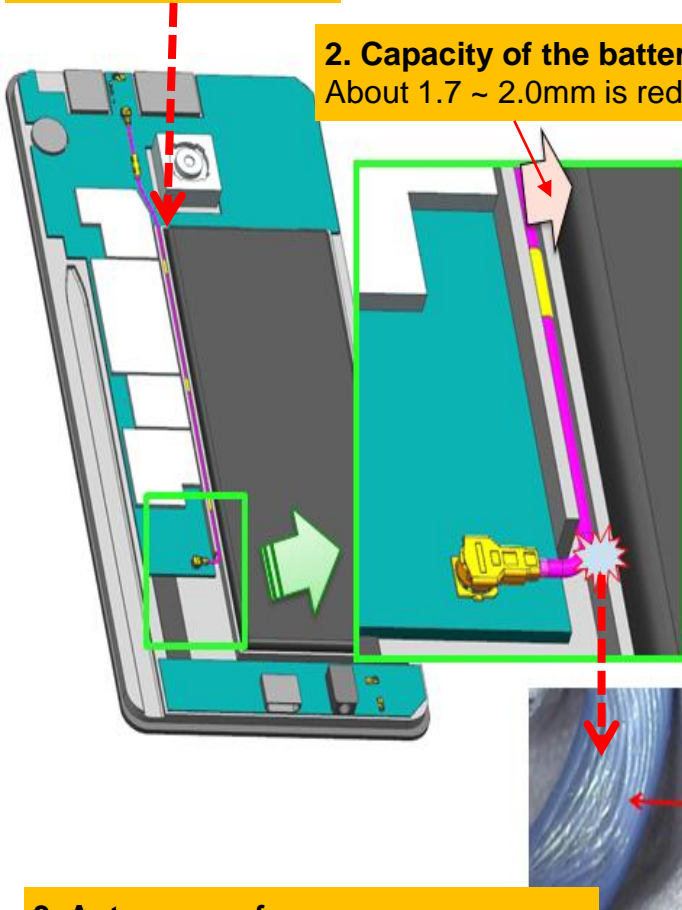
Superior to Coaxial Cable

1. Assembly time

When the cable is inserted into the guide

2. Capacity of the battery

About 1.7 ~ 2.0mm is reduced



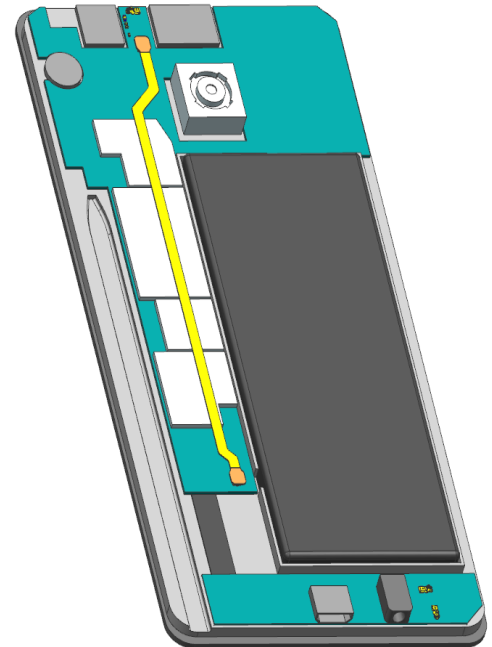
3. Antenna performance

Antenna performance deviation due to GND shield change.

There are **3** problems with coaxial cable application.



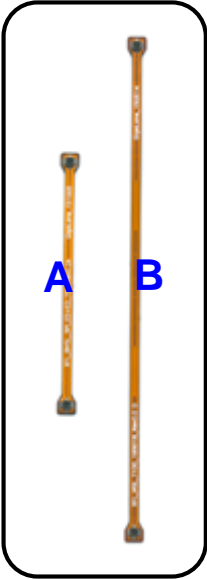
FRC can address these shortcomings.



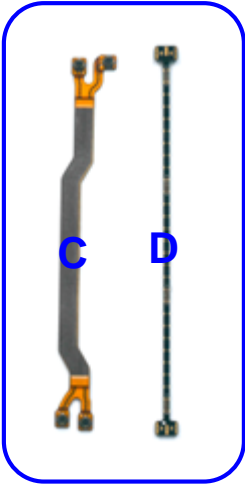
Spec. & Features

Insertion Loss (dB)													
Type	Length	Thickness	Width	Layer	0.5GHz	1GHz	2GHz	2.5GHz	3GHz	3.5GHz	4GHz	5GHz	6GHz
A	50mm	0.28	2.0	3	-0.24	-0.40	-0.60	-0.73	-0.93	-1.18	-1.22	-1.24	-1.33
B	100mm	0.28	2.0	3	-0.37	-0.58	-0.94	-1.07	-1.20	-1.49	-1.85	-1.97	-2.33
C	80mm	0.25	4.0	4	-0.31	-0.53	-0.83	-0.96	-1.04	-1.22	-1.45	-1.55	-1.61
D	80mm	0.60	1.2	5	-0.20	-0.30	-0.47	-0.51	-0.55	-0.64	-0.68	-0.84	-0.93
E	150mm	0.75	54.5	8	-0.56	-0.85	-1.27	-1.48	-1.58	-1.82	-2.00	-2.37	-2.72

RF 1 Line



RF 2 Line



Solution for next generation mobile device



<Foldable smartphone>

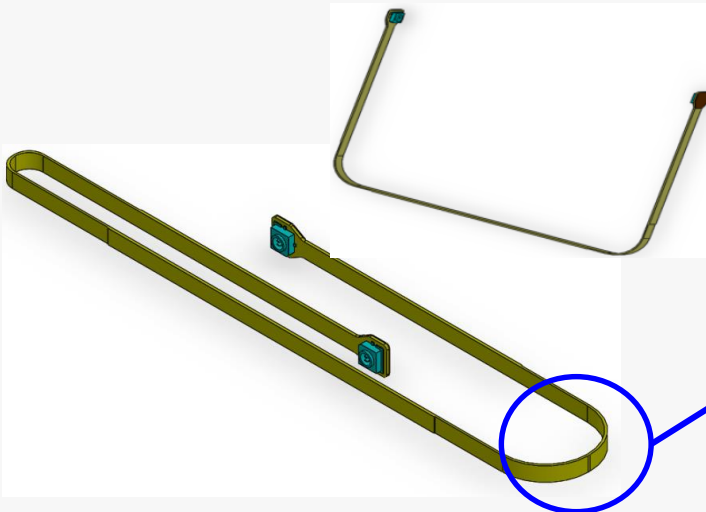


<Bendable smartphone>

Coaxial cable is vulnerable to bending.



GigaLane's FRC provides durable solution with minimizing signal loss.



<GigaLane's Patent for bending>

400K times of bending durability is guaranteed

GigaLane holds patents in this category.

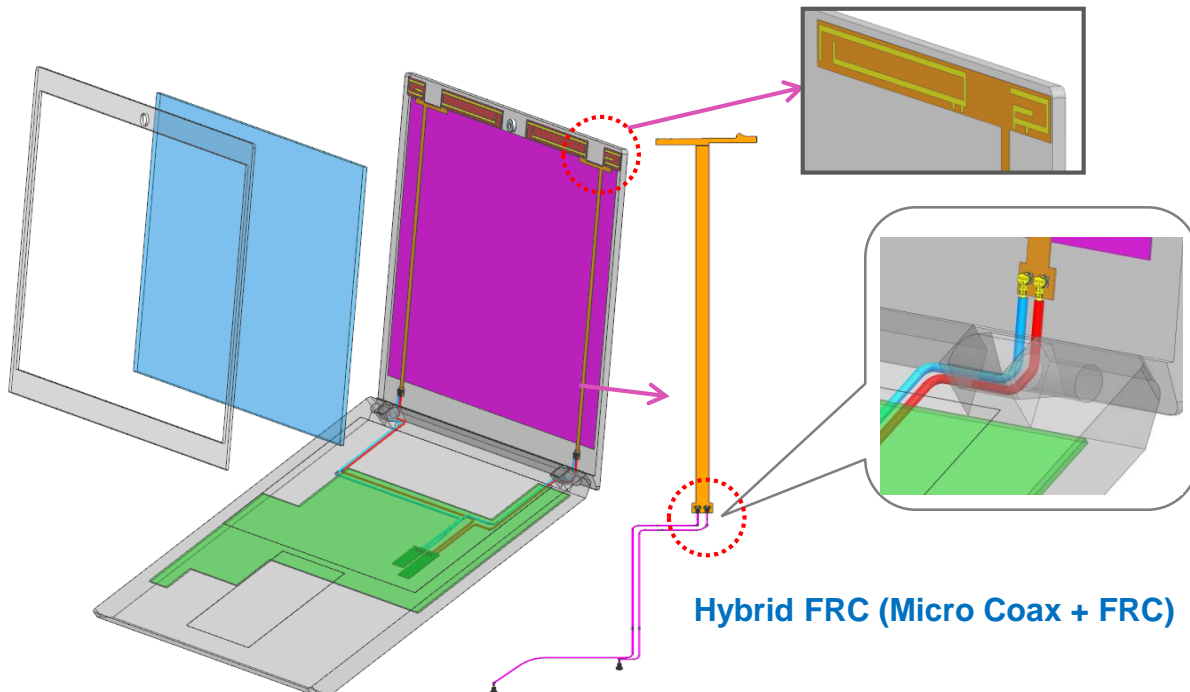
Solution for Bezel - less device



< Zero Bezel Note-PC >

Overcoming space limitation.

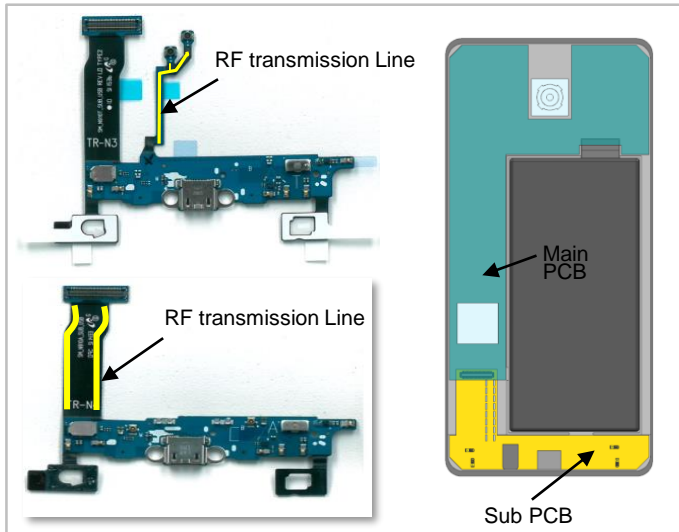
**GigaLane's FRC provides
hybrid solution
with minimizing signal loss.**



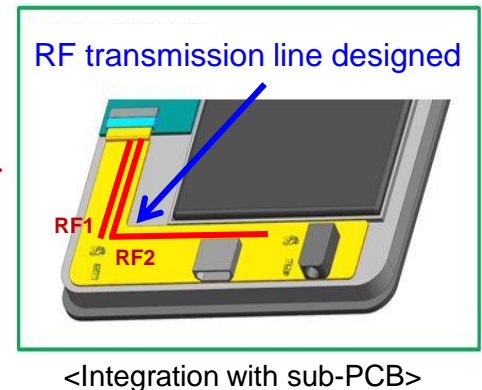
Hybrid FRC (Micro Coax + FRC)

GigaLane holds patents in this category.

Integration of sub-PCB and RF transmission Line



- Integrated front-end solution from Main-PCB to Sub-PCB
- Applied RF transmission line inside of PCB(Sub-PCB)
- **Securing margin of space** inside of mobile device
- Minimizing signal loss with Optimized PCB Design



GigaLane holds patents in this category.

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