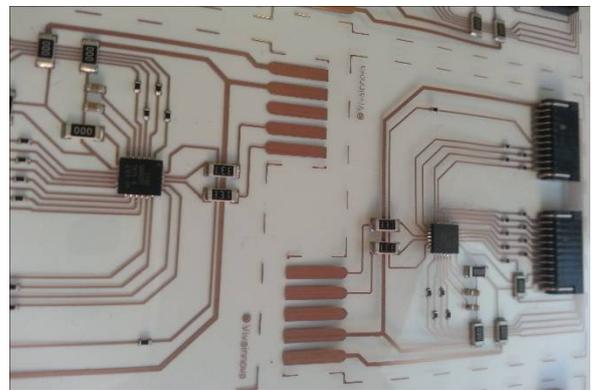
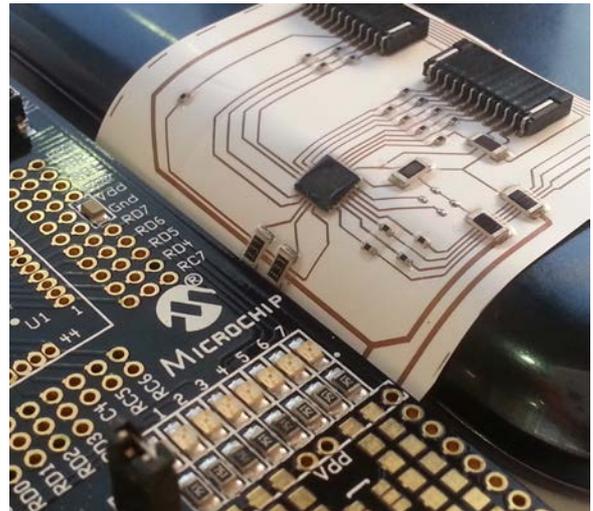


# Ultra-Flexible Printed Circuits

## UFPC

**Hybrid Electronics** consists on combining **Printed Electronics** with **Traditional Electronics** to exploit the competitive advantages of both technologies. While Traditional Electronics provide **high performance** and maturity, Printed Electronics provides **flexible substrates** with high volume production, at a relatively **low cost** compared with traditional electronics.

Ultra Flexible Printed Copper Circuits allow **SMD components** to be **soldered** onto economical plastics. **Vivainnova** continues to lead innovation as a supplier of SMT assemblies using flexible circuits. Ultra Flexible Printed Copper Circuits are **extremely thin**; they can range between **50 to 200> microns**, and consist of high quality, low cost **conductive copper traces** printed on a plastic substrate. UFPC can be set up in many different sizes according to the application, being suitable for **flat, curved and bendable surfaces**.



“ Avoid the Polyimide in your products, without losing any performance. ”

JULIAN SERRANO; CEO VIVAINNOVA



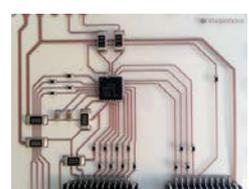
Printed Electronics



SMT Assembly



Silicon Blocks



UFPC Product

FLEXIBILITY

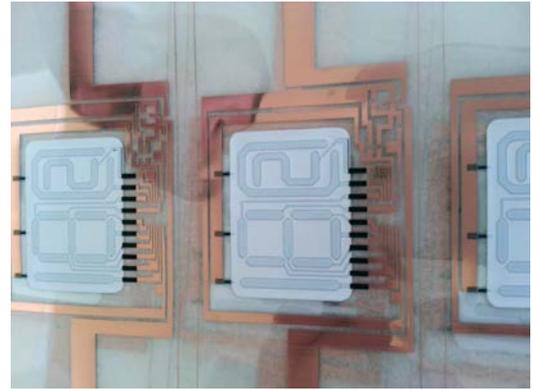
ULTRA-THIN

PRECISION

GREEN TECH

LOWER COST

# Ultra-Flexible Printed Circuits UFPC



## ADVANTAGES

The UFPC technology has a considerable amount of advantages in many applications:

- ❖ **Electrical connections** where the assembly is needed to **bend** during its normal use, such as folding mobile phones (dynamic application).
- ❖ **Electrical connections** between sub-assemblies to substitute **wire harnesses** (which are bulkier).
- ❖ **Electrical connections** where board thickness or **space constraints** are driving factors.
- ❖ **Tightly assembled electronic packages**, where electrical connections are needed in 3 axes.



Flexible circuits are often used as connectors in many applications where flexibility, space savings, or production constraints limit the usefulness of fixed circuit boards or hand wiring.



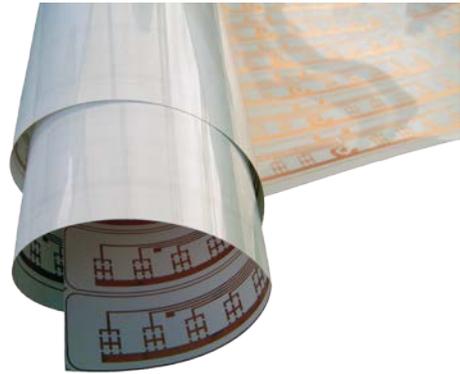
## HYBRID ELECTRONICS AND UFPC MAKES NEW BENEFITS POSSIBLE

- ❖ **Traditional electronics:** Using traditional electronic components, all the features and power that they have to offer are exploited.
- ❖ **Thinness and lightness:** Combined with the flexibility, thinness and lightness provide complete adaptability to the product.
- ❖ **Anti - Vibration:** Improved resistance to vibration over conventional products (rigid substrates vs. flexible substrates).
- ❖ **Maturity:** Traditional electronics provides a lot of maturity and reliability on operation.

UFPC allow **SMD components to be soldered** on to plastic. As printing technology **standardized** electronic components and tolerances, such as resistors and transistors, the **replacement** of the current **conventional SMD electronic components**, by the same **fully printed components** will be carried out, significantly reducing the current production costs through this new generation of flexible circuits.



# Ultra-Flexible Printed Circuits UFPC



## TECHNICAL INFORMATION

Material	Printed copper traces on	
	PET substrate	PEI substrate
Maximum substrate width	400 x 500 mm	400 x 500 mm
Maximum printed width	380 x 480 mm	380 x 480 mm
Thicknesses	125 um White PET 50 um Clear PET	100 um Amber PEI 50 um Amber PEI
Printing process	Single-sided and double sided	Single-sided and double sided
Sheet resistance	25- 30 mΩ / square	25- 30 mΩ / square
Maximum operating temperature	105 °C	125 °C
Minimum smd component package	1206 (metric 3216)	1206 (metric 3216)
Minimum conductive trace width	200 um	200 um
Minimum gap between conductive traces	250 um	250 um

## MAIN APPLICATIONS

- ❖ UHF, NFC, GSM, Wlan and Microwave **antennas**.
- ❖ **Flexible heaters**.
- ❖ Flexible circuits with SMD **LED lighting**.
- ❖ Circuits for disposable and/or portable **medical devices** for the user.
- ❖ Printed circuit **sensors**. Extensiometric gauges.
- ❖ Flexible **touch sensors**.
- ❖ **Flat cables and interconnections** with minimum thickness.
- ❖ **Flexible electronic circuits** in general.
- ❖ **Printed Electromechanical Generators** "PEMG"
- ❖ **Printed solar cells**. Electrodes and Connections.
- ❖ **Displays, memories and flexible batteries**.

