PRINTED ELECTRONICS TECHNOLOGIES
YEARS OF R&D DRIVEN BY CONTINUOUS INNOVATION HAVE POSITIONED GGI SOLUTIONS AS A LEADER IN PRINTED ELECTRONICS TECHNOLOGIES

As a level 1 member of the Printable Electronics Consortium created by the National Research Council Canada, GGI is at the forefront of leading edge innovations.

From curved capacitive interfaces, printed heaters, printed devices, frequency selective surfaces, in mold electronics, biosensors, to new conductive materials development, our innovation team plays a key role in offering custom solutions for various market applications.

By combining our design, engineering and manufacturing expertise and capabilities, we offer advanced printed solutions where customers can benefit from numerous advantages such as: optimized costs, enhanced safety, energy optimization, reduced weight and form factor, flexibility and conformability.
CapFlex - CAPACITIVE FLEXIBLE INTERFACE

Intuitive, ergonomic, light, thin and flexible, the CapFlex is a printed technology integrating a capacitive sensor and a backlighting system. It is designed for a seamless integration into various applications of the Aerospace, Medical, Industrial, Defense, Transportation and many other markets.

KEY FEATURES
- Scratch, liquid and fingerprint resistant
- Custom graphics printed on second surface
- Curvature radius down to 12.7mm
- Capacitive and backlight thickness less than 1mm
- Lens thickness achieved as low as: 2mm (Polycarbonate)
- Meet DO-160 requirements

APPLICATION EXAMPLES
- INSTRUMENT PANELS
- SEAT CONTROLS
- WEARABLES
- REMOTE CONTROLS
GGI has developed printed heaters using positive temperature coefficient (PTC) inks. The heaters are lightweight, thin, flexible and produce heat rapidly in a uniform fashion without the need of a thermostat which makes this technology inherently safe. Installation is easy and the heating elements can be applied to a wide range of surfaces.

**KEY FEATURES**
- Power density up to 1500 W/m²
- Minimum thickness down to 0.5mm
- Minimum weight of 0.6 kg/m² (0.5mm thickness)
- PTC ink setpoint from 40°C to 85°C
- Operating temperature -40°C to 70°C

**APPLICATION EXAMPLES**

- Blood and IV bags heater
- Bed or seat heater
- Battery heater
- Wing heating and de-icing
FREQUENCY SELECTIVE SURFACES (FSS)

Frequency Selective Surfaces (FSS) is an exciting technology that makes wireless applications more efficient by filtering, blocking or reflecting RF signals. These solutions are designed for indoor or outdoor environments where walls, panels, ceilings, floors and various surfaces can be transformed into RF active surfaces and act as a shield or as an enhancement of the antenna performance. FSS are light, thin, flexible and provide an optimized integration for various environments and applications.

KEY FEATURES
Blocks or reflects an RF signal emitted at a selected frequency (up to 30 GHz)
Transparent to RF signals emitted at other frequencies (signals are transmitted)
Screen printed using Ag PTF ink or Ag molecular ink
RF features designed and characterized by the CRCC (Communications Research Centre Canada)

APPLICATION EXAMPLES

MILITARY COMMUNICATION
AIRPORT COMMUNICATION
CELLULAR NETWORK DEPLOYMENT
SMART BUILDINGS
GGI's printed circuit expertise has always been at the heart of the company’s history. Our innovation team in collaboration with our research partners have continuously tested, qualified and developed emerging technologies with the focus of providing reliable products.

Our printed electronics technologies along with our printed circuits and devices are developed to meet customer certification requirements and are compliant with a wide range of applications. Printed on various substrates using resistive, conductive or dielectric inks, these technologies offer flexible solutions and an outstanding cost efficiency.

The printed electronics devices and circuits are a potential replacement solutions for discrete components and are especially efficient for high frequency antennas, RLC (Resistor, Inductor, Capacitor) circuits, low pass filters and more.