



“Thinking Carpet”

The project "Thinking Carpet" is a joint research project being conducted by Vorwerk Teppichwerke, Hamelin and Infineon Technologies AG, Munich. It is part of the "Technology Lifestyle Solutions" development series initiated by Infineon – applications for everyday life into which electronic functions are integrated.

Facts

Product:	Wall-to-wall carpet with electronic network for sensor functions
Surface:	Vorwerk quality carpet with all properties typical of contract carpets. Structure, patterning and spectrum of colours can be chosen freely.
Backing:	Textile backing plus specially developed secondary backing layer made of special material with integrated network
Overall Height:	Approx. 10 mm, of that approx. 2 mm module height (2004) => 0.3 mm module height (as of 2007)
Module:	Module size approx. 3.5 x 3.5 cm (2004) => Silicon chips: size approx. 7 mm ² (as of 2007)
Sensory Technology:	In the prototype: physical contact, but also possible are pressure, smoke, fire, humidity, light, temperature, noises etc.
Sampling Ratio:	1 – 25 modules per square metre (application-specific)
Networking:	Via conductive copper fibres in the textile backing material
Voltage:	12 Volt via mains adapter
Control:	PC with special application software for querying the modules
Connection:	Via the series interface (RS232) on the PC
Data Transfer Rate:	115,200 Bit/s
Max. Network Size:	9999 modules per series interface
Max. Carpet Size:	Depends upon the module density (1-25 m/m ²)
Points of Linkage:	Carpet production widths are linked via special plug contacts
Dissipation Loss:	Dissipation loss dependent upon the number of modules per m ² . Per module approx 70 mW (sleep mode - most of the time) and approx. 100 mW (when module is active)
Market Launch:	Prospective start as of 2007
Price per m ² :	Not yet known
Project Partners:	Vorwerk & Co. Teppichwerke GmbH & Co. KG, Hamelin Infineon Technologies AG, Munich