

## CorTec Brain Interchange 3 Components

A fully implantable system for chronic open and closed loop interaction with the nervous system, consisting of:

### An internal Electronics Unit

to which implantable electrodes can be connected.

### A wireless External Unit

that powers the implant, reads out the recorded data and transmits them to a PC. It also generates electrical pulses and sends them to the electrodes.

### A Software Package (C++ API)

allowing you to program your specific experimental paradigm.

CorTec Brain Interchange currently features 32 channels, all of which can be used for recording and stimulation. No skin breach is involved due to its fully wireless functionality.

CorTec Brain Interchange can be connected to various types of electrodes:



Micro ECoG Electrodes



Cuff Electrodes



Individual Solutions

Standard designs are available as well as individual solutions. Electrodes for intracortical field potential recording are available upon request.

Please contact us with your specific design request!

## Technical Specifications

Recording	Channels	32 channels + 1 reference + 1 ground (ground switchable between dedicated ground electrode and any other electrode contact)
	Sampling Rate	900-1000 Hz
	ADC Resolution	16 bit
	Upper Cutoff Frequency	450 Hz
	Lower Cutoff Frequency	0.5 Hz
Stimulation	Channels	Each of the 32 channels (concurrent stimulation at 8 channels: 7 predetermined channels, 1 switchable to any of the 32 electrode contacts)
	Type	Current stimulation (against ground or other electrode)
	Current	Max. - 6 mA / +1.5 mA at 1.5 kΩ impedance
	Shape	Biphasic
	Pulse Width	Programmable (negative phase: 10 μs - 2,500 μs; positive phase: 4 times the duration of the negative phase, with 1/4 of the amplitude of the negative pulse)
Encapsulation	Dimensions	60 mm x 30 mm x 7 mm
	Encapsulation Material	Ceramics
	Coating	Medical grade silicone rubber
		Designed for long-term use
External Unit	Dimensions	App. 80 mm x 50 mm x 18 mm, 50 g weight
	Power Supply	Rechargeable battery, up to 7 h battery life
	Material	PA2200 (Certified biocompatibility)
	Bidirectional Data Transmission	1 Mbit/s (half-duplex)
	Options for Fixation	Magnetic or via proprietary piercing fixation system (patent pending)
Software	C++ Interface	CorTec is a young neurotechnology company located in Freiburg / Germany. Thinking ahead, we develop tomorrow's technology already today.