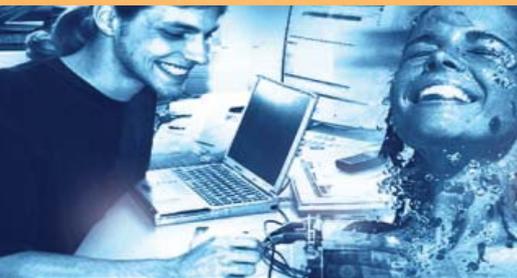




...open new Horizons



Neurostimulators

Electrical and Chemical Stimulation

There are two main mechanisms of neural signalling — global signalling by means of different chemical substances and local fast signalling by electrical impulses. The first method is being widely used by nature and involves generation of specific signalling substances being spread by the blood circulation system, thereby electrical signalling is used to transfer different sensor or control signals to the specific organ very fast.

Due to this reason NeuroConnex proposes two types of neural stimulator:

- Series “Horizon” for electrical stimulation
- Series “Spring” for controlled drug infusion

Close a Loop ...

Such applications as a Deep Brain Stimulation (DBS) or pain cancellation are best suited for exploration of the closed-loop stimulation methods. Series “Horizon” offers you a highly flexible electrical stimulator and a multi channel neural recording system simultaneously. Open software interface and double core central processing unit allow you to implement new stimulation protocols, perform a real-time recording or implement highly sophisticated closed-loop stimulation algorithms.



Electrical Neurostimulators

Series “Horizon”, designed for long-term electrical stimulation of brain structures, nerves or muscles, offers you a universal platform for different applications.

The 4-channel constant current stimulator is capable of generating several standard wave forms or be programmed to generate a free-form stimulus. The double-core architecture based on two CPUs with more than 50MIPS computation power makes you application very safe against software errors during algorithm development. Rechargeable Li-Polymer battery provides enough energy for more than four weeks of continuous operation. Open Software Interface includes several libraries to control the stimulator and sample application, implementing closed-loop algorithms.

Technical characteristics

Number of stimulation channels	4
Amplitude digitalisation, bit	12
Maximal sampling frequency, MHz	1
Output voltage range, V	12
RF frequency, MHz	13.56 ISM
Maximal leakage current, nA	75
CPU Performance, MIPS	50
Electrode materials	Pt, Ir, IrOx
Stimulation modes ¹	CG , BP
Stimulation amplitude, µA	1-2000
Dimensions, mm	45x30x10
Weight, g	12

(1) - common ground (CG), bipolar (BP)

Implantable Infusion Pump

Fully implantable infusion pumps - Series “Spring“- is designed to provide long-term drug infusion in animals. The drug is infused over an extended period of time and may be delivered at a constant or variable rate by programming the pump based on physician’s specifications. The drug reservoir may be refilled as needed by an external needle injection through a self-sealing septum in the pump. Internal battery may be also recharged several times and thus extend the infusion period.

Technical characteristics

Reservoir volume, ml	4
Continuous infusion rate, ml/min	0.1-3
Minimal infusion dose, µl	5
RF frequency, MHz	13.56 ISM
Dimensions, mm	50x30x15
Weight, g	8

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