High-Res EEG system
NeurOne

Revealing the secrets of brain

mega

4 x 40 channels
Real time Analog Out
24 bit sampling
Sampling up to 80 kHz / channel
Expandability with additional modules

NeurOne is innovative monitoring solution developed by Mega Electronics. This neuroscience measurement system offers more accuracy, cleaner signal, faster sampling, modular solution and more flexibility and expandability by utilizing the latest advances in digital signal processing. NeurOne is a versatile system and it can be used widely in different neuroscience and psychological applications.

NeurOne is especially designed for use together with transcranial magnetic stimulators having special reduction technology to remove magnetic artefacts in short latencies. Advanced headbox design enables both AC and DC signals separately or simultaneously. New innovative Tesla amplifier brings MRI compatibility to NeurOne.

Advanced technology

NeurOne challenges traditional neurological laboratory systems with:

- High 24-bit resolution
- High speed sampling up to 80,000 Hz per channel
- High precision amplifier technology
- Possibility for NeurOne Brainstorm, 1200 channel version

Applications

- EEG/EP
- ERP research
- EEG + TMS research
- EMG research with many channels
- Group studies (up to 4 persons and 4 video cameras fully synchronized)
- Other neuroscience measurements
- Other psychological measurements

Technical details in brief

Technical details of NeurOne in brief:

- 4 x 40 channels - fibre optical connection between the amplifiers and main unit
- 24-bit sampling
- Optional rechargeable batteries for amplifier (to reduce 50/60 Hz artefact)
- AC/DC mode individually selectable (channel by channel)
- Windows 8 compatible software. Exports to other data formats.

Accessories

NeurOne system is multifunctional tool for both neuroscience and psychological applications. You can customize the system by combining it with other devices/modules.

- Inclinometer
- Gonio- and torsiometer
- Heart rate sensor
- Load cell, force and pressure sensors
- Accelerometer
- Gyro sensor
- GSR sensor
- EMG, ECG preamplifiers
- Customized modules and transducers

NeurOne Tesla brings NeurOne technology to MRI field - Faster sampling and 24 bit resolution as well as MRI synchronized data acquisition. Same Multi Syncbox technology that allows recordings up to 1200 channels with NeurOne Brainstorm.

Mega Electronics Ltd - Pioneers in Biosignal Monitoring

Mega Electronics Ltd is a Finnish high tech company with 27 years of experience in developing professional signal monitoring devices for neurology, rehabilitation, occupational health and sports medicine. Company has developed a compact ambulatory technology to detect muscle activity on the skin surface both in laboratory and field conditions. We are ISO 9001 and ISO 13485 certified company.

Sales, marketing and customer service has been organized through the world wide dealer network in over 20 countries. An intensive co-operation together with several universities and research laboratories in Japan, USA and Europa has made it possible to maintain continuous development.

Contact us using email mega@megaemg.com or
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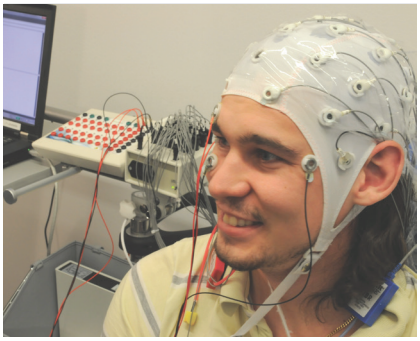
Specifications



Description: Powerful and Versatile Electroencephalography Research system
Monopolar Ch.: 32 channels per headbox (full system 128)
Bipolar Ch.: 8 channels per headbox (full system 32)
High level Ch.: Max. 8 per headbox, connected through isolated analog adapter (to bipolar channels)

Sampling method: All channels sampled simultaneously

Max. sampling rates:
- 80 kHz (up to 20 channels)
- 40 kHz (up to 40 channels)
- 20 kHz (up to 80 channels)
- 10 kHz (up to 160 channels)

Available sampling rates:
- 250 Hz, 500Hz, 1000Hz, 2000Hz, 5000Hz, 10 000Hz (160 ch)
- 20 000Hz (80 ch), 40 000Hz (40 ch), 80 000Hz (20 ch)

A/D Resolution: 24 bit
Input Impedance: > 1GΩ
CMRR: Typically 106 dB
Bandwidth: Max. 0 - 10 kHz

	DC Mode	AC Mode
Analog filters (-3 dB point):	LP: 10 kHz	HP: 0.16Hz, LP: 7 kHz
Full scale Input Range:	± 430 mV	± 4.3 mV
System Gain:	10	1000
Sensitivity:	51 nV/bit	0.51 nV/bit

Digital (TTL) Inputs: 2 isolated trigger in/out lines, 8 bit unisolated trigger in
High Level Input Range: ± 5V or ± 10V (with isolated analog adapter, settable)
Impedance measurement: 1 kΩ to 50 kΩ
Transient Artifact Protection: Limiter/High Speed Switch (settable)
Mute: Mute for AC stage (settable)
Headbox size: 20 x 7 x 16 (40 channels), **Headbox weight:** 0.680 kg
Main unit size: 33 x 12 x 27 cm **Main unit weight:** 3.6 kg

Connections:
- Headbox: Power 12V, Fibers, Cap connection (D-Sub 37), Bipolar/Module (D-Sub 25 ± 5V available max. 1000 mA)
- Main unit: Power 12V, Ethernet, SPI, Isolated Headbox Power (x4), Fibers to Headbox (x4), Serial Port (x3), Trig In/Out (x2 RJ10)8-bit Trig In (D-Sub 15), Analog Out (Centronics 24 pin)

Delivery Classification: MDD class IIa. Type BF applied part

Safety Specification: EN 60601-1, EN 60601-1-1, EN 60601-1-2
EN 60601-1-4, EN 60601-2-26

Warranty: 2 years

Designed & Manufactured in Finland

NeurOne system not yet available in the USA

Finland patent 80201 · Finland patent 98045 · Europe patent 0749340 · U.S. patent 5,881,731 · U.S. patent 6,289,894 · Japan patent 3320829 · Japan patent 3604391 · Canada patent · U.S. patent 5,361,775 · U.S. patent 6,264,582 · CE 0537 · ISO 9001 · ISO 13485

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