BIOPAC Systems, Inc. ®

PRODUCT SHEET

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MOBITA WEARABLE, WIRELESS PHYSIOLOGICAL MONITORING & LOGGING

- **32 channels of data in the palm of your hand**
- **Mobile physiologic measurement with Mobita & Acq*Knowledge***

MOBITA-W SERIES
Mobile 32-Channel Biopotential systems

MB-CAP SERIES
Mobita ConfiCap only

MOBITA-W-32EEG System includes ConfiCap MB-32EEG-CAP-A

MOBITA-W-20EEG System includes ConfiCap MB-20EEG-CAP-B

MOBITA-W-12+20 System includes ConfiCap MB-12+20-CAP

MB-32EEG-CAP-A

MB-20EEG-CAP-B

MB-12+20-CAP

Mobita Overview

Mobita® is a new wearable physiological signal amplifier system that can record up to 32 channels of high-fidelity wireless biopotential data, including ECG, EEG, EGG, EMG, and EOG data. The device includes a trigger channel that can be used to synchronize the system with other devices or data streams. When the onboard accelerometer is used with Acq*Knowledge*'s Actigraphy feature, it is possible to evaluate a subject's activity levels.

Record in the lab or out, from simple to tough and demanding measurement situations. The system can either telemeter data back to a computer running Acq*Knowledge* for real-time display and analysis of the signals, or record it locally for later download. Easily switch between live or logging modes to suit your research protocol. Compact design, powerful specs, and impressive flexibility combine to create the ultimate solution for mobile physiologic measurement!

Key System Features

- 32 channels of wireless biopotential data
- Fully-integrated in Acq*Knowledge*® software
- Built-in 3D accelerometer for position information
- Trigger channel supports TTL inputs from 3rd -party hardware
- Built-in WiFi telemetry (range typical > 10 m indoors)
- No cable movement artifacts

- No filtering (including Notch filter) for true unadulterated signal quality
- True DC recording
- 24 bit data resolution
- Flash disk recording (up to 16 GB) for data back-up and holter applications
- Rechargeable Li-Po battery
- Rugged construction: sturdy, dustproof enclosure

Featured Applications

- Psychophysiology
- Neuroscience
- Exercise Physiology & Sports
- Gait & Movement Analysis

- Brain Computer Interface
- Sleep Studies
- Neuromarketing
- Home-based Ambulatory Testing

Flexibility

With Acq*Knowledge* and Mobita®, the system is quickly configured to do the work of multiple systems without the added cost of multiple amplifiers.

Quickly change the electrode configuration or signal type by swapping out the ConfiCap. Simply disconnect one header and snap on a new configuration for a completely different application. Record a 12-lead ECG while recording EEG and EMG data all with the same device.

Analyze with Acq*Knowledge*

- Powerful automated analysis routines for ECG, HRV, EEG, EMG, EGG, and many more!
- Intuitive user interface with fully customizable display

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- Video Tutorials on key features and analysis routines
- Guided channel and acquisition setup with presets and quickstarts

MOBITA-W System Options

MOBITA-W-32EEG System
32-Channel EEG

MOBITA-W-20 EEG System
10/20 EEG + 13 open leads

MOBITA-W-10+12 System
32-Channel Biopotentials

Complete systems include one Mobita hardware unit, one ConfiCap configuration with accessories, and Acq*Knowledge* software. Each flexible Mobita system records up to 32 channels of data at up to 2K s/s. Stream data live into Acq*Knowledge* or log data for later upload. Swap ConfiCaps to change experiment protocols.

- MOBITA-W-32EEG System This system includes one Mobita hardware unit and one ConfiCap MB-32EEG-CAP-A with medium 32-channel headcap (H2O-CAP-M; other cap sizes available) and water electrodes. Water electrodes eliminate the need for gel. Individually shielded inputs.

- MOBITA-W-20EEG System This system includes one Mobita hardware unit and one ConfiCap MB-20EEG-CAP-B configured for 10/20 EEG; and EEG Cap (medium CAP100C; other sizes available). Leaves 13 open TouchProof inputs for user's choice of biopotential data. Unshielded inputs.

- MOBITA-W-12+20 System This system includes one Mobita hardware unit and one ConfiCap MB-12+20-CAP to record up to 32 channels of biopotential data. Unshielded inputs.

Specifications

Sampling
Resolution: 24.414 nV/bit, referred to input
Sampling rate: 2000, 1000, 500, 250 Hz
Channel bandwidth: DC up to 0.2 x sample freq
Input:
Input signal difference: 409.6 mV pp
Input common mode range: -2.0 V . +2.0 V
Gain factor: 10
Noise: < 0.4 µV RMS @ 0.1 . 10 Hz
Input Impedance: >10 G
CMRR: > 100 dB typical
# of channels: Up to 32 analog
Power supply: Battery Li-Polymer with protection circuit

Accelerometer
Range: ± 16 *g*
Resolution: 13 bit

Sensitivity: 3.9 m*g*/bit
Battery life:
WiFi mode: 8-10 hours (environment dependent)
Logger Mode: 17-19 hours
Hybrid Mode: WiFi and Logger: 8-10 hrs (environment dependent)
Note: The number of channels enabled does NOT significantly influence battery life.

Filtering
Filter: No filtering within channel bandwidth
Type: Unipolar, bipolar (user configurable from unipolar inputs)
Trigger: Either trigger (TTL) or generic (e.g., RS232 compatible) digital inputs poss*i*ble through custom designed ConfiCap
Dimensions: 150 x 70 x 25 mm (with ConfiCap)

Computer Requirements

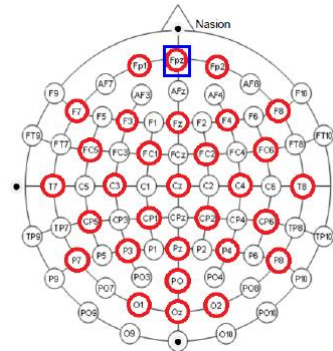Computer should be running Windows 7 64-bit or Windows 8 64-bit with a Core i5 or a Core i7 processor.

Notes **!** No support provided for operating systems older than Windows 7.

Slower computers may be able to use WiFi mode with the Mobita, but it may not be possible to transfer or import the logged data.

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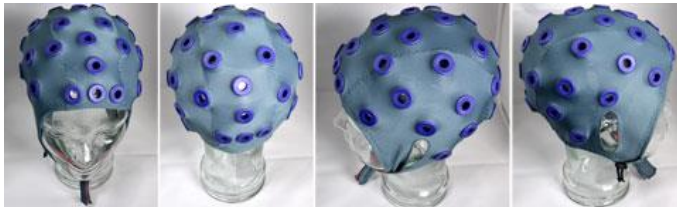www.biopac.com

ConfiCap™ Options

ConfiCaps allow you to quickly change the configurations of the inputs for specific applications (i.e., 32-ch EEG, EMG, or combinations of ECG/EMG/EEG, etc.), customize your own design, or create protocol driven configurations when recording with a MOBITA-W System. Each channel is unipolar (single-ended) and Acq*Knowledge* is easily configured to create unique montages.

- **MB-32EEG-CAP-A** 32-Channel EEG ConfiCap

The MB-32EEG-CAP-A is a complete assembly for the Mobita wearable biopotential system that interfaces with a 32-channel electrode cap. This particular EEG cap uses water electrodes, which eliminates the need for gel. The assembly also includes a trigger connector for synchronization with other devices. The electrodes terminate in a Mobita confi-cap connector. Snap the assembly to the Mobita unit and attach the cap to a subject to record 32 channels of data for either in laboratory telemetry or remote data logging applications.

TIP: Use a permanent marker on the white top of each input to indicate its montage position to help expedite setup.

H2O-CAP Series Headcaps for Mobita Water Electrodes

H2O-CAP-SMALL 50-54 cm

H2O-CAP-MEDIUM 54-58 cm

H2O-CAP-LARGE 58-62 cm

Headcaps include 32 grommets for Mobita water-based electrodes. Each MB-32EEG-CAP-A assembly includes one user-specified H2O-CAP size); individual headcaps can be used to add to or replace the included cap.

- **RX-H2O-ELECT** Replacement Water Electrode Pack

Replacement pack of 100 water electrode strips for the Mobita EEG system. These small strips of absorbent material must be rolled up and inserted into the electrode cavity and placed on the EEG cap prior to recording. The Mobita wearable physiological signal amplifier system records 32 channels of high-fidelity wireless EEG data and includes 100 water electrode inserts. This pack of 100 strips can be used for additional subjects.

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- **MB-20EEG-CAP-B** EEG 10/20 + 13 TP Adapters

International 10-20 electrode montage

The MB-20EEG-CAP-B is a complete assembly for the Mobita wearable biopotential system that interfaces with a 10/20 electrode cap and 1.5 mm Touchproof sockets for adding additional signals.

This combination interface allows for a full 10/20 EEG, plus optional biopotential signals for EOG, EMG, and ECG. Snap the assembly to the Mobita unit and attach the cap to a subject to record 32 channels of data for either in laboratory telemetry or remote data logging applications.

- **MB-12+20-CAP** 12 Surface Electrodes + 20 TP Adapters

The MB-12+20-CAP is a complete assembly for the Mobita wearable biopotential system that interfaces with 12 snap fit electrode leads and 20 Touchproof (1.5 mm) sockets. Record 32 channels of biopotential data using a variety of electrode configurations including both disposable and reusable options. Connect to the Mobita and the subject and record up to 32 channels of data for either in laboratory telemetry or remote data logging applications.

Breakout boxes are available. Contact BIOPAC *for more information.*