Advanced EMG with Research Accuracy & Real Life Flexibility. Run with it.
## Five MA300 EMG Systems to choose from!

### All Systems Include:
- EMG Channels - 6, 8, 10, or 16
- Full Set of Preamplifiers
- EMG Graphing Software
- Minimum 10-1000Hz Bandwidth

### Advanced Systems Also Include:
- Custom Preamp Combinations
- Bandwidth up to 2kHz
- Additional 4 Research Channels
- 8 Dedicated Events Channels
- 8 Setting Low Pass Filter

### System Comparison

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<th>MA300-X Systems</th>
<th>Advanced EMG Systems</th>
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<td>MA300-XII</td>
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<td></td>
<td>MA300-18</td>
<td>MA-300-22</td>
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<tr>
<td></td>
<td>MA300-28</td>
<td></td>
</tr>
<tr>
<td><strong>Total Channels</strong></td>
<td>12</td>
<td>16</td>
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<tr>
<td><strong>EMG/Multi-Use Channels</strong></td>
<td>8</td>
<td>16</td>
</tr>
<tr>
<td><strong>Extra Research Channels</strong></td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td><strong>Dedicated Event Channels</strong></td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Package Included</strong></td>
<td>Standard System Package</td>
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<tr>
<td><strong>EMG Bandwidth</strong></td>
<td>10-1000 Hz -3dB</td>
<td>10-2000 Hz -3dB</td>
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<tr>
<td><strong>Variable Low Pass Filter</strong></td>
<td>No</td>
<td>Yes- 8 Position LP Filter Included</td>
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<tr>
<td><strong>Preamplifier Options</strong></td>
<td>Gel Snap Preamplifier</td>
<td>User Selected- Gel/Surface/ Fine Wire,</td>
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<td><strong>Connector Material</strong></td>
<td>Plastic Binder</td>
<td>Metal LEMO or Plastic Binder Options</td>
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<td><strong>Software Included</strong></td>
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<td><strong>Backpack Support</strong></td>
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<td><strong>Event Switches Included</strong></td>
<td>No</td>
<td>Yes</td>
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**UPGRADE-** Receive upgrade purchase credits to affordably add more channels later!
Wireless Option

New and existing MA300 users can now easily and affordably upgrade to wireless!

- Clean, real time, wireless data!
- Plug directly into MA300 EMG Systems
- Secure encrypted transmission
- Supports DC-2000kHz bandwidth
- Up to 28 channels!

ONLY A 1.2MS TRANSMISSION DELAY- Means perfect synchronization with 3D and video systems.

Real Time Digital Wireless Option-instant wireless capabilities.......................MA300-RTD

MA300 System Features

Every MA300 includes our core flexibility, reliability and support features.

Flexibility

A wide range of options so you achieve the best results possible.

- Maximize the signal and eliminate clipping
  10 position channel gain options
- Ultrawide ISEK approved EMG bandwidth ranges
  More than double the bandwidth of other leading brands!
- Connect and use other equipment (goniometers, sensors, etc.)
  We work with you to help you connect your extra equipment
- Work with any combination of electrode types
  Surface preamplifiers, fine-wire electrodes, or snap gel electrodes
- MA300 Systems are in use worldwide
  Research ranging from Cerebral Palsy, Parkinson’s, Athletes and Sharks!

Reliability

Made with the highest standards and quality components so you can depend on your equipment and trust your signal.

- Individual Signal Level Indicators
  Instantly shows overload and signal errors
- Internal Calibration Button
  Output a standard signal to ensure accuracy and easily document settings
- Data and equipment are protected by long lasting quality parts
  Shielded cables, metal boxes, stainless steel disks
- High manufacturing standards, quality design, and filtering
  Ensure the best CMRR and smooth signal cutoffs without ringing
- Endless Digital Recording
  Offering live, raw, full bandwidth data with no delays or signal dropout

Support

We sincerely care about our customers and our products.

- Unmatched Customer Service
- 2 Year Hardware Warranty
- 1 Year Free Software Upgrades
- Money Back Guarantee (USA)
Easily Detect Event Contact.

This collection of three separate items can be used together for easy connection to Motion Lab Systems EMG Systems or used independently for custom designs.

**Event Switches**

**Features**

- Accurately detect contact
- Small 15mm on/off sensor
- Saves Money- reusable low cost design
- Comfortable- 0.5mm ultra thin switch
- Easy placement- flexible 100mm tail
- Easy to use in custom applications

A. Event Switch-25mm dia. w/100mm Tail.........................MA-153
B. Event Switch Extension Cords (pack of 8)......................MA-136
C. Event Switch Adaptor Cable Pair.........................Part Codes Vary
Double Sided Sticky Tape (1 roll)..........................000-100-TPE

**Goniometers**

We’ve made it easy for our customers to get synchronized goniometer and torsiometer data. Ideal for quick, simple, and accurate measurement of joint movement in multiple planes -

**Features**

- Extremely robust, lightweight and flexible
- Undetectable- comfortably worn under clothing
- Does not hinder the actual movement of the joint

Goniometer Interface Box (Specify Connector).................GIB-000
Twin Axis Electro Goniometers (Five size options)......SG Series
Single Axis Gonio/Torsiometers (Two sizes options).....Q Series
Mini Single Axis Electro Goniometer (e.g. fingers).......F Series
Goniometer Cables at 1500mm (60in)............................A-1500
Goniometer Extension Cable (GIB to MA300)..............A-1SGQ-002

We can connect.

Flexibility! With 3 different channel types available in the MA300 EMG System you can easily connect a wide range of equipment.

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Pre-Amplified Electrodes

Four fully interchangeable designs!
So you can design your EMG study around your needs, rather than around your equipment limitations.

A full set of pre-amplifiers is included in the MA300 EMG System!

Pre-Amp Features

- Accurate Clean Signal
  Differential Amplification at skin surface offers a high resistant to noise
- Signal Protection
  RFI, ESD, and EMI protection
- Durable and Reliable
  Corrosion resistant Stainless Steel contacts

Ready to plug in!

Regardless if you’re connecting to our newest EMG System or other brand equipment— we have a connector option for you.

A. New! Three flexible snap leads!- Connects to standard gel electrodes!
   Snap EMG Pre-Amp, x20 gain...............................MA-420

B. Discrete Fine Wire Thumbscrews- Secure attachment to any bare wire.
   Discrete EMG Pre-Amp, x20 gain..........................MA-416
   Discrete EMG Pre-Amp, x300 gain..............................Y03

C. Built-in surface disks with a ground- No cable artifact and little to no skin preparation!
   Surface EMG Pre-Amp, x20 gain............................MA-411
   Surface EMG Pre-Amp, x300 gain.............................Z03

D. Custom Preamplifier- Designed to meet your needs!
   Custom Set Pre-Amplifiers..................................CUSTOM

TIP- Check out the bead markers for easy cable identification!

1. Large LEMO- Metal (004)
2. Mini LEMO- Metal (003)
3. Binder- Plastic (002)
4. Harwin- Santoprene (001)
5. Bare Wire- None (000)
**EMG Software**

Included with the MA300 EMG System!

Standard MA300 EMG Systems include the graphing software and Advanced MA300’s include the EMG Analysis software. Both programs work with data from a range of manufacturers.

**EMG Graphing**
Display and customize graphs as Raw, Rectified, Enveloped,
- Calibrate and View to Scale
  Micro-volts, percentage of MVC, or custom scales
- Easily Normalize Data
  MVC, Gait Cycle, or Manual Muscle Test (MMT)
- Automate Data Processing
  Calibrate and label channels, apply filters, detect events
- Full C3D File Support
  Read raw EMG data from other manufacturers

**EMG Analysis**
All the features of EMG Graphing with Advanced Analysis functions!
- Smoothing and Enveloping Methods
- Fatigue Assessment
- Classical EMG Analysis Methods
- EMG Activity Analysis
- Quality Assurance
- Most Custom Features can be added in

**BONUS! “Normal” Database**
Included in Both the MS-905 and MS-900
- Adult and Age-Matched Child- Includes 13 age options
- Simple Comparisons- Graph and compare data file to the included or your own custom set “normal” activity bars
- Fully Customizable- Enter in you own data for comparison

EMG Graphing Software- Basic graphing applications........................MS-905
EMG Analysis Software- Advanced features and customizing options........MS-900
Data Viewing & Recording

Improve Data Quality!

Live high resolution data viewing immediately alerts you to any problems (e.g. poor electrode contact), so they can be fixed as they arise - resulting in higher quality recordings!

Easily connect to:
- A standalone PC (Using MA-720 & WINDAQ-PRO)
- Directly to an exiting ADC (Such as Motion Capture)
- Simultaneously Connect to Both (Using free splitter cable)

Analog to Digital Data Conversion Hardware (MA-720)
- Connects MA300 EMG System to a PC for stand-alone EMG!
- Easy to Connect and Use - USB Connection
- High Resolution Capability - (250 kHz at 16-bits)

Real Time Viewing Software (WINDAQ-LITE)
- Included with the MA-720 HARDWARE
- Real Time Heads-Up Display - View, live streaming data.
- Display Up to 16 EMG channels.
- Multitasking operation while still displaying live data!

Advanced Data Recording Software (WINDAQ-PRO)
- Record and display 32 data channels, live and in real time.
- Sample your data at optimal speeds! Up to 250,000/sec.
- Export, import & translate data files (text, ASCII, MATLAB...)
- Label channels and add data comments during/after collection.
- Includes many data handling and analysis features such as Automatic Time and Date Stamping, Over-Sampling, Frequency Analysis, Digital Filtering, X-Y Plotting, and Programmable Gain.

EASY INTEGRATION - Works with VICON, MAC, Qualysis, CodaMotion, AMTI, Bertec, Kistler, and more!
C3D Software
Advanced Graphing, Editing & Printing.
Works with various vendor files! Report Generator Software plots multiple files in a single report, allowing easy comparison and graphical data identification.

- Easy and effective visualizations
- Customizing, colors/stylizing, orienting options
- Works with kinematic, kinetic, analog & EMG data
- Overlay EMG/force over kinematic graph
- Easily graph and plot multiple channels, files and variables
- Multi-task! Open, view and work with multiple reports
- Add data from up to 120 files in any single graph or report
- Easy printing, flexible outputs!

Gait Cycle Calculation Add-on
Automatically extract and calculate numeric variables.

- Use with Report Generator to perform common gait related calculations automatically (MAX, MIN, AVE) for gait cycle, stance and swing phases as well as sophisticated slope, area-under-curve and waveform enveloping calculations on any GCD/C3D data file.
- Easily create and automate any number of variables (value of maximum knee flexion, time within the gait cycle when a maximum occurs, slope of any section of the gait cycle data power over any period within the gait cycle)
- Each variable can be stored within the file or used and referenced by subsequent calculations.

TIP- Export files directly to PowerPoint for easy presentations.

Report Generator Software.............................................................MS-975
Gait Cycle Calculation Software (requires Report Generator)........MS-976

RData2
A universal ASCII file exporter reads several file formats and converts the data to either CAMARC, DST, ASCII format or to a customizable ASCII text format specified by the user.

RData2 Software- Universal ASCII File Export..................................MS-950
**C3D Software**

**FREE suite that includes five useful programs!**
- **MLSViewer**: View, display or copy the content of a C3D file.
- **C3Dsearch**: Quickly search a file folder for C3D file data or parameters.
- **DSTeditor**: Graphically edit DST and GCD files.
- **GCDexport**: Automatically average data or extract desired data sets.
- **Orthotrak**: Convert Motion Analysis XLS files to GCD format.

**C3D File Editor Software**

Full-feature, graphical, C3D file editing program
- Easily create/edit/verify any C3D data
- View data value graphically and numerically
- Automatically set up to delete, filter, interpolate, translate, and display data parameters
- Exchange data with Excel Spreadsheets - converts, imports and exports C3D files
- Save time with “drag and drop” batch editing - eliminating repetitive data editing

**C3D Server Software**

High-speed C3D file access to read, write, and create C3D files.
This C3D Software Development Kit (SDK) for Microsoft Windows™ can be used to build C3D applications via Visual Basic, C++, Java, MATLAB etc.

**Software Service Agreement**

All Motion Lab Systems, MS Software purchases automatically include one full year of software support. Providing free upgrades and free priority technical support. For continued coverage, purchase this MLS Software Support extension upfront or on an annual basis.

**FREE** Download trial version of software from our website: www.motion-labs.com.
Attachment Vests and Belts

Subject Vests and Belts are custom made by Motion Lab Systems to comfortably and securely hold the MA300 EMG Systems and other equipment in place.

Features
- Secure- Large Velcro placement pad to securely hold the EMG System backpack in place
- Organized- Included Velcro cable holders help group and organize cables
- Washable and Reusable
- Adjustable- Velcro tab for easy size adjustment
- Safe- Latex free

Neoprene Subject Vest
A. Child Size Vest...............................MA-142
B. Teen Size Vest...............................MA-144
C. Adult Medium Size Vest....................MA-145
D. Adult Large Size Vest......................MA-143

Neoprene Subject Belt
E. Child Size Belt...............................MA-140
F. Adult Size Belt...............................MA-141

FYI- Two vests are included with the Advanced EMG System,
Disposable Wraps and Tapes

**Coban Wrap**
A latex-free disposable wrap tape. This wrap is self adhesive without sticking to skin! Great for securing preamplifiers! A 3M Brand Product. Two inches in width, tan color.

**Double Sided Sticky Tape**
Clear disposable double sided sticky tape is sold as a single roll. Latex-free. Great for securing event switches! 1 inch in width.

**Retro-Reflective Tape**
This 1” wide single sided adhesive Retro-Reflective Tape by 3M Scotchlite is motion camera compatible and easy to cut. (Sold by the metre or whole rolls available.)

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Electrodes

**Fine Wire Needle Electrodes** are sterilized, disposable, preassembled, stainless steel fine wires. The bi-polar/paired needles have a 200mm long wire for EMG applications and work great with Motion Lab Systems brand discrete pre-amplifiers. (10 pack of individually wrapped assemblies.)

**Mini Adhesive Electrodes** are small single use gel electrodes that adhere directly to the skin surface. Available with a connector or snaps. Great for use with small or hard to reach muscles.

**Reusable Ground Electrode** is a durable reusable electrode with a 1 inch surface area. Connects to the EMG System backpack for an additional system ground.

**Snap Leads** allow you to easily connect snap-on gel electrodes to screw on discrete preamplifiers. (Preamps with built-in snap also available.)

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Bead Markers Set

Includes 16 reusable bead identifiers for easy cable recognition. Snaps on and off.

**Bead Markers Set (16 bead identifiers, 8 colors)**...............................................................MA-321
NEW!

4 Channel EMG Interface

Simple & quick amplified EMG.

Ideal for smaller research studies, this affordable interface easily connects Motion Lab Systems advanced differential pre-amplified electrodes into your ADC.

Available with just the interface box or as a complete ready to connect package, both at amazing prices.

Ideal for:
- Student Projects
- Research Applications
- Preliminary/Exploratory Work

TRADE-IN CREDIT
Towards a full EMG System purchase.

EMG Interface Box

Simple Box unit offers you the capability to fully power up to 4 pre-amplifiers and output the signal through standard BNC outputs.

- 4 Pre-amplifier Input Plugs (Binder)
- 4 Output Plugs (BNC)
- Optional Ground Connection Plug (DIN)
- Two Power Lights
- Also Includes 9V Batteries (48 hour continuous use)

EMG Interface Package

Power and connect two pre-amplified EMG electrodes in this one simple package.

- 4 Channel Interface Box
- 2 Surface Pre-Amplified Electrodes (Z03-002)
- 1 Reusable Ground Electrode

(Unlike the complete MA300 EMG Systems, this is intended for research and DOES NOT PROVIDE ELECTRICAL ISOLATION for the subject and has no clinical approvals for use on human subjects.)

New! Four Channel EMG Interface Box- batteries included...............................PIB-002
New! Two Channel EMG Interface Package- (Includes 2 Preamps)..............PIB-002-PK
Wireless Perfection: Simple, synchronous, 32 channels
This new radio frequency transmitting device by Myon offer wireless data acquisition for EMG, accelerometry, force sensors and more.

New Partnership
For customers seeking totally wireless EMG, Motion Lab Systems, Inc. is pleased to announce the new distributor relationship with Myon AG, a Swiss high-tech company. The new Myon wireless EMG device has the highest signal quality with very simple handling at a low cost, revolutionizing EMG technology.

System Features
- Simplest application- No wires
  Wireless probe picks up, process & transmits your signal to the receiver
- High signal quality- Advanced engineered technology
  Ensuring signal quality during the signal processing and transmission
- Precision settings- Based on international standards
  5-1000 Hz adjustable bandwidth, 4000 Hz adjustable sampling rate
- Small + lightweight = mobile
  40mm x 40mm x 15mm, 19g
- High transmitting range
  Proprietary radio technology guarantees up to 30 meters
- Long battery life
  8 hours of continuous measurement and only 30-60 minutes re-charging
- Real time transmission
  Synchronous Data with only 16.2ms transmission delay
- Transmits a range of signals on up to 32 synchronous channels
  EMG, goniometers, force, and ECG

Output Details
- Easy real-time analog output for motion capture integration
- Compatible with Motion Lab Systems EMG Software
- Direct analog output to any ADC or motion capture system

New! Total Wireless Radio Frequency Transmitter Device (Specify channel types & quantity).........RFTD
Knee Alignment Device

Independently define the knee flexion/extension axis.
This virtual knee joint center eliminates the need for the medial knee markers.

Features
- Set of Two- Complete with 6 retro-reflective markers.
- Supported by most major Motion Capture systems.
- Comfortable Fit- Latex-free pads provide added comfort at the knee.
- Easy to Place- Spring loaded adjustment slides open & holds securely in place.
- Customer Support- equipment maintenance and spare parts are available.

Easy to Use
1. Fit the KAD onto the knee.
2. Perform a static trial of flexion/extension of the knee.
3. Calculate the virtual knee joint center with your supporting motion capture software.
4. Remove the KAD.
5. Use the calculated knee joint center location during motion capture trials.

MDT-2 Mechanical Testing Device

Have you moved 3D cameras or changed force plate settings?
This inexpensive and vital quality assurance tool can be used to ensure the accuracy and reliability of your kinematic and kinetic data. The device is simple to use - just assemble and use it to apply a force to the plate that you wish to test and then analyze the data using the CalTester software package available from C-Motion.

Uses
- Accurate determination of the force plate position within the lab coordinate system.
- Ensure correct settings of parameters (analog scale factors & origin offsets).
- Quality control in gait and biomechanics labs.

Features
- Durable metal, precision manufactured.
- Passive and active marker systems!
- Includes both retro-reflective markers and mounting disks.
- Assembles in less than a minute.
- Durable storage case included.
**Connection Cables**

**Signal Cables**
A single ultra thin cable connects the MA300 EMG System Backpack Unit to the Desktop Unit transmitting live, raw data while supplying isolated DC power.

**Output Cables**
A shielded cable connects the Motion Lab Systems’ EMG Desktop Unit to an Analog to Digital Converter or Junction Box.

TIP! Get live real time viewing even if you’re synchronizing into a another ADC with a custom splitter cable.

A. Fiber Optic Signal Cable for MA-200 EMG Systems - 15m (50 feet) .................. MA-233
B. Analog Output Cable - MA-720 Termination (MA300 to MA-720) .................. 130-DTQ32
C. Analog Output Cable - w/ BNC Termination .................................................. MA-130-BNC
D. Analog Output Cable - w/ Pin Termination .................................................... MA-130
E. Coaxial Signal Cable for MA300’s - (18m, 0.2kg (8oz), 2.4mm dia.) .................. MA-133
F. Analog Splitter Cable (25-way MFM “D” connector) for all MA300 Systems ...... MA-330

**Power Cables**
A country specific power cable is supplied with all new MA300 EMG Systems and MA-720’s. With the MA300’s auto sensing internal powers supply you can plug in right away!

Power Line Cable- Specify country when ordering .......................... MA300-PLC

CUSTOMIZE- We can accommodate most lengths! Also, ask about custom cables!
Find the Perfect EMG for you!

Five Complete MA300 EMG Systems!
- Wireless or Cabled.
- 12, 16, 18, 22, 28 Channels!
- Unbeatable Flexability, Reliability and Support!

Myon Simply Wireless cable free EMG System.
- Slim, lightweight and extremely fast!
- Individual wireless transmission units.
- Up to 32 channels.

Completely New EMG Interface Box
- Perfect for small projects.
- Simple & quick amplified EMG.