## Technical features*

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Wireless Probe</strong></td>
<td>Wireless IEEE802.15.4 (probes - receiver)</td>
</tr>
<tr>
<td><strong>Battery</strong></td>
<td>Rechargeable with proprietary charger (clip connector)</td>
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<tr>
<td><strong>Range probes - receiving unit</strong></td>
<td>Up to 30 meters (100 feet)</td>
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<tr>
<td><strong>Memory</strong></td>
<td>On board solid-state buffer memory system</td>
</tr>
<tr>
<td><strong>Status LED</strong></td>
<td>Acquisition/stand-by mode and low battery</td>
</tr>
<tr>
<td><strong>Weight</strong></td>
<td>&lt;9 grams including battery</td>
</tr>
<tr>
<td><strong>Size</strong></td>
<td>23.8 x 37 x 10mm main electrode - Ø 16.5 x 10mm satellite electrode</td>
</tr>
</tbody>
</table>

### Options

**Software BTS EMG-Analyzer**
- Data acquisition, display and analysis
- Analysis of localized myoelectric muscular fatigue phenomena
- Oscilloscope for the real-time viewing of the signals
- Database for data storage

**Software BTS EMGenius**
- Database for data storage
- Tool for the automatic elaboration of EMG signals relative to cyclical movements as for instance gait analysis in upper limbs or biokinematical analysis systems.

**Software BTS EMG-Analyzer**
- Database for data storage
- Analysis of localized myoelectric muscular fatigue phenomena
- Oscilloscope for the real-time viewing of the signals
- Database for data storage
- Tool for the creation of customized report of the exams in HTML format completely configurable by the user.

**BTS Docking Station**
- Multiple output charged equipped with internal batteries to recharge the EMG probes for the power connection is not available.

**BTS Workstation**
- Preconfigured Desktop or Laptop PC dedicated to the biological signal processing.

**Wireless Foot Switch Probes**
- Independent 16 versions for the automatic gait phases identification
- 8 on/off sensors for each foot switch probe (97 mm都想)

**Wireless Electrogoniometer Probes**
- Clean gauge technology for the accurate measurement of the angles drawn by the joints in the different planes.

**Wireless Accelerometer Probes**
- Accelerometers for the measurement of the linear acceleration in 3 axes
- Integrated with Gyroscopes, permit kinematic measurement of ponders, velocity and acceleration.
- Allows the automatic gait phases identification (heel strike, toe contact, etc.) of the movements of the ankles and the frequency of the gait.

**Video Acquisition System**
- BTS VIXTA, system to video recording using up to 4 TV cameras simultaneously, natively synchronized with EMG signals.

**Analog Output Receiver**
- This tool allows for a quick integration with other motion analysis systems.
- It consists of a wireless receiver with analog output features: raw EMG data available in analog format, simultaneously with the digital wireless data transmission.
- It is equipped with an USB interface for plug and play.

**BTS FREEEMG & ISOKINETIC Kit**
- For integration with isokinetic machines (BDI, CRES, CONTREX).

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* Technical specifications are subject to change without prior notice.

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**High Performances Wireless**
- 30 m - 9gr
BTS FREEEMG 100 RT represents a generation leap in the diagnostic device technology for biological signals analysis. Based entirely on wireless technologies, BTS FREEEMG 100 RT uses up to 6 miniaturized probes with active electrodes weighing less than 9 grams for signal acquisition and transmission for EMG, angles, velocity, acceleration and pressure assessment.

BTS FREEEMG 100 RT satisfies researchers and clinicians requirements who need to rely daily on a highly efficient system easy to configure and use. The probes amplify the signals, digitize them on board and communicate with the USB receiver connected directly to the computer. The complete absence of wiring not only minimizes the patient distress during the preparation but also grants him full range of motion during the task without restrictions. The probes variable geometry and the dramatically reduced size and weight allow them to be used on any body segment and during all types of movement (walking, running, jumping, etc.) on a variety of subjects without affecting in any way the motor pattern.

Thanks to the use of environmentally friendly rechargeable batteries several hours of data can be recorded. BTS FREEEMG 100 RT is supplied with advanced EMG software applications: EMG-Analyzer and BTS EMGenius.

**BTS EMG-Analyzer**

BTS EMG-Analyzer is the most complete software solution for EMG signal analysis. Includes predefined templates for evaluations in clinic, sport and research field. It integrates also an editor to design elaboration protocols; the user can develop quickly and effectively customized elaboration protocols. Thanks to an innovative visual object based interface, the mathematical analysis language is translated into graphical form.

**BTS EMGenius**

BTS EMGenius is the applicative software for the functional evaluation of cycle movements (as in the gait, by means of an automatic identification of the gait phases) or of movements as “hand to mouth”, “sit to stand”, “hand flex-extension”, “teaching”, etc. BTS EMGenius provides a user friendly and intuitive interface the operator immediately learns how to use the software achieving the highest productivity level for the lab.

**Applications**

BTS FREEEMG 100 RT can be used in research, sports, occupational medicine, gynatology, neurology and orthopaedics.

With the available software suites, BTS FREEEMG 100 RT becomes the most advanced diagnostic tool available today to evaluate: - neurological and orthopaedic pathologies, - pharmacological therapies, - motor deficit progression, - use of orthoses, - rehabilitative follow-ups, - sport training optimization

**Record of miniaturization**

BTS FREEEMG 100 RT uses the best technology available today. Totally wireless, it integrates probes with active and variable geometry electrodes, weighing less than 9 grams.

**Quicker Analysis and Increased Accuracy**

The total absence of cables makes for a quick patient preparation. The lightweight probes are attached directly to the pre-gelled contact areas each, electrogoniometers and accelerometers probes. The patient can move around freely.

**Powerful and Comprehensive**

The system manages up to 6 electromyography probes, footswitch probes, covering up to 4 contact areas each, electropionimeters and accelerometers probes.

**Biofeedback**

Real-time visualization of the acquired signals for biofeedback and monitoring applications. The probes are equipped with a solid-state buffer memory to secure data safety in case the probes are outside of the transmission range or if there is WiFi signal loss during the acquisition.

**Signal Range**

Up to 30 meters for the data transfer between the probes and the workstation.

**On-board memory**

More than 5h of non-stop acquisition

**Signal Range**

Up to 30 meters (100 feet)

**Interoperability**

Designed to interoperate with movement analysis, posturometry and stabilometry systems, thanks to the software integration through SDK or by means of the analogical output receiver. It is intended also to interoperate with isokinetic machines (BIODEX, CYBEX and CON-TRIX), rehabilitative robots (Reo-go, BTS ANYMOV) and virtual reality therapeutic systems (BTS NIRVANA) for the evaluation of real muscle activity during rehabilitation or sport training and planned testing activities.

**Quick setup**