

# SilverBumps™ Electrodes



**Diagnostic quality bio-potentials  
without skin preparation or electrolytic gels.**

*"The **Bumps** have it when it comes to CardioWare."  
Orbital's SilverBumps™ electrodes are key to 'locking'  
sensors to the skin.*

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## Key Features:

- Dry Signal Acquisition
- No Skin Preparation
- Durable
- Custom Designable

## Monitoring Applications:

- ECG
- EEG
- EMG
- Other Bio-Electric Signals

## Health Applications:

- Cardiac Monitoring
- Mobile Outpatient Telemetry
- Disease Management
- Preventative Medicine
- Elite Sport/Athlete Training
- Lifestyle Management
- Corporate Wellness

## Benefits:

- Eliminate skin preparation and messy gels
- Improve comfort
- Extend wear duration
- Increase patient compliance
- Prolong shelf life

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Side view of a SilverBumps™ electrode showing connector and surface features



Snap side showing connector



Skin side showing surface features

Orbital's SilverBumps™ brand electrodes, part of Orbital's line of Bumps™ electrodes, use unique surface features designed to allow measurement of bio-electric signals with no skin preparation, messy gels or irritating adhesives.

SilverBumps™ electrodes are engineered to match or exceed industry standard signal-to-noise ratios of traditional electrodes. The combination of the unique design elements (sensing surface, housing and connector) minimize motion artifacts which improve signal quality. SilverBumps™ electrodes also outperform traditional electrodes in terms of patient comfort during long-term physiological monitoring applications.

Currently, SilverBumps™ electrodes have been cleared by the Food and Drug Administration for continuous wear, single-person-use ECG applications for up to 48 hours. Orbital's IP portfolio includes 11 issued patents and 8 pending patents.

## Electrode Specifications:

- Diameter: **25 mm**
- Effective surface area: **500 mm<sup>2</sup>**
- Snap to bump height: **8.5 mm**
- Resistance of electrode (front to back): **0.25 Ω**
- Skin/electrode impedance: **10-50 KΩ**
- Flexible design for custom applications
- Silver/Silver Chloride coated ABS (acrylonitrile butadiene styrene)