



ultium®

EMG



Wireless Surface EMG with Internal IMU and Biomechanical Sensors

- *Versatile SmartLead™ Options*
- *Up to 4000 Hz Sample Rate*
- *Complete Data Recovery with Lossless Technology*
- *Built-in Impedance Checker*
- *Lifetime Battery Replacement*

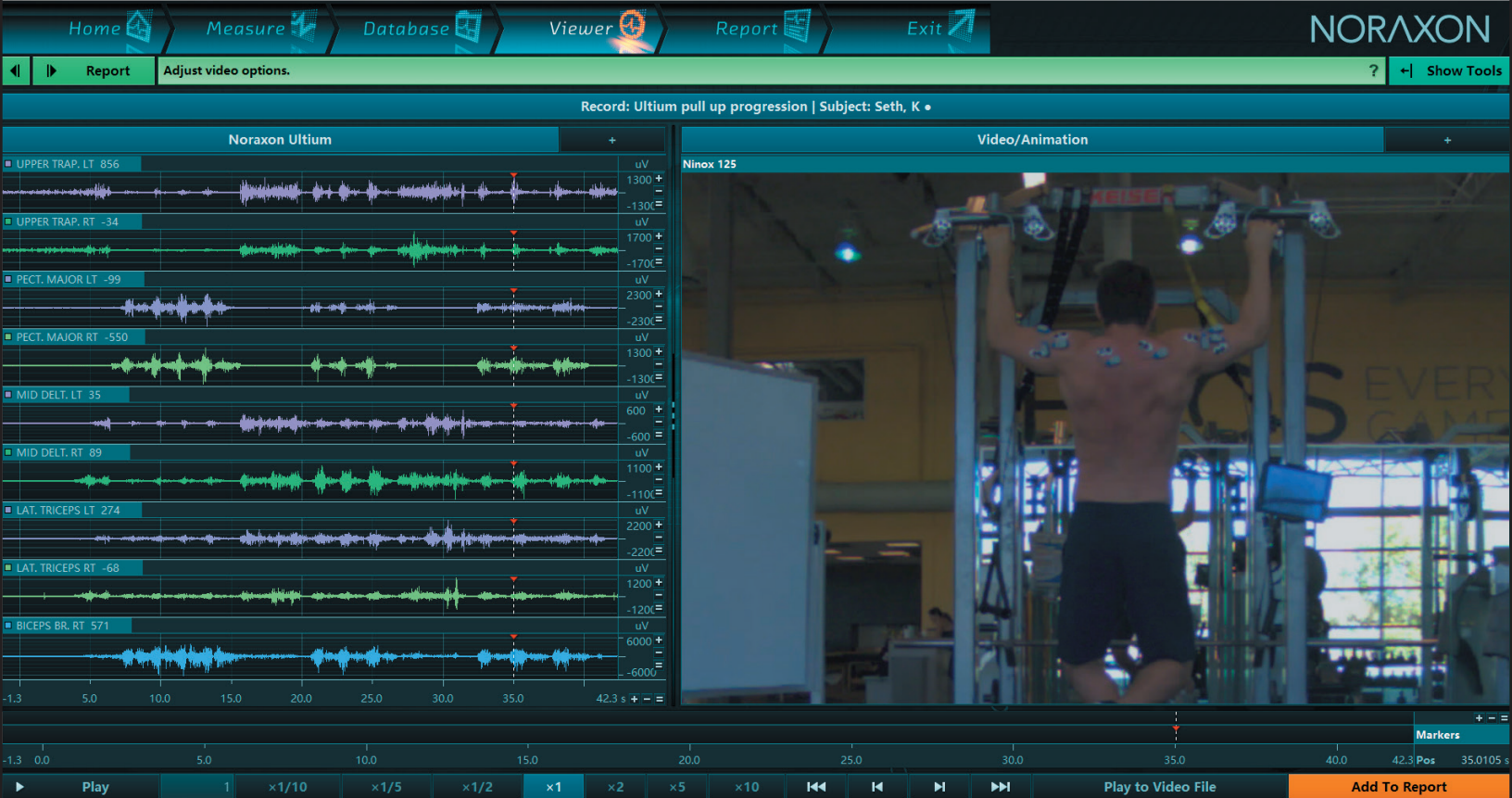
EMG

3D MOTION

SOFTWARE

PRESSURE/FORCE

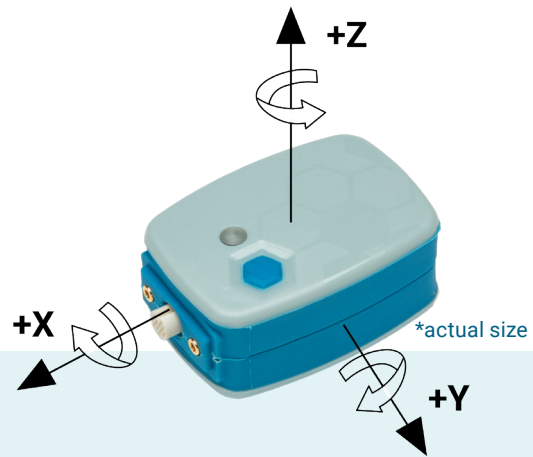
VIDEO ANALYSIS



The Ultium[®] EMG Sensor System

Hardware Features

- Up to 4,000 Hz EMG sampling rate
- 24-bit internal sampling resolution
- $\pm 24,000 \mu\text{V}$ EMG input range
- Baseline noise $< 1 \mu\text{V}$
- Shielded cables for minimal artifact
- Software controlled digital filtering
- Enhanced radio frequency communication
- Integrated IMU (16-bit resolution)
- Lossless technology with wireless or post-hoc data recovery
- Internal memory for up to 8 hours of data logging
- Up to 32 channels of analog output available
- Mobile device compatibility
- Sweat-resistant design



KEY FEATURES



Built-in impedance checker and signal quality monitor

INTUITIVE SOFTWARE

- Comprehensive signal processing toolbox
- Customizable analysis reports
- Multi-device synchronization
- Multiple data export formats
- HTTP streaming functionality



Digital device
integration support



VERSATILE SMARTLEADS

- Surface EMG
- Footswitch (FSR or insole)
- Fine-Wire EMG
- 2D Goniometer
- Analog Input Probe (3-channel)
- Flexiforce Local Pressure Sensor
- Physiomonitor (breath/heart rate)
- Accelerometer (all-in-one 24 g/100 g/400 g)
- Force Sensor (100 lbf or 500 lbf)



TECHNICAL DATA

POWER AND SYNCHRONIZATION

- Receiver: USB connection to PC
- TTL 2-5 V sync input
- Powered by USB

OUTPUT AND TRANSMISSION FREQUENCY

- up to 100 mW
- 30 m sensor transmission range
- 2402 - 2480 MHz
- 16-bit analog outputs with adjustable gain
- Fixed analog output delay: 300 ms

EMG SENSOR DATA ACQUISITION

- 24-bit ADC , dynamic resolution
 - 0.3 μV resolution for 0 to 5,000 μV
 - 1.1 μV resolution for 5,001 to 24,000 μV
- Selectable low-pass cutoff at 500/1000/1500 Hz
- Selectable high-pass cutoff at 5/10/20 Hz
- Selectable sample rate of 2000 or 4000 Hz

EMG PREAMPLIFIER

- No notch (50/60 Hz) filters
- Baseline noise: < 1 μV RMS
- CMRR < -100 dB
- Input impedance: > 1,000 M Ω
- Input range: \pm 24 mV

IMU SPECIFICATIONS

- \pm 16 g accelerometer
- \pm 2000 degrees/second gyroscope
- \pm 4800 μT magnetometer

DATA RECOVERY

- High-speed data transfer via docking station
- 2GB onboard memory, up to 18 hours

ULTIUM-EMG SENSOR DIMENSIONS

- Size: 37 x 24.5 x 16.5 mm (LxWxH)
- Weight: 14 grams

ULTIUM-EMG DOCKING STATION DIMENSIONS

- Size: 174 x 92 x 169 mm (LxWxH)
- Weight: 545 grams

ULTIUM RECEIVER DIMENSIONS

- Size: 261 x 36 x 29 mm (LxWxH)
- Weight: 185 grams



CERTIFICATIONS



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