# Mbody MCell3 – Technical Specification        2022-04-07

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|---|---|
| **Name** | MCell3   (part of Mbody 3 and ErgoAnalysis product families) |
| **Type** | MC3L-1.0 |
| **Used with** | All Myontec Mbody3 & ErgoAnalysis Smart apparels |
| **For applications** | Mbody Live 3 (iOS 9 or later, Android 6 or later) <br> Muscle Monitor 3 <br> ErgoAnalysis |
| **Memory type** <br> **Memory capacity** | Flash Memory <br> ~ With MShorts3 30 hours (AVG EMG), for other configurations see table attached |
| **Channels** | With Mbody 3 Kit: 6 differential EMG biosignal channels <br> With Muscle Monitor:  EMG + 3 accelerometric, 3 magnetometric & 3 gyroscopic channels <br> With ErgoAnalysis:  8 differential EMG biosignal channels and 3 angles |
| **ADC, Sampling** <br> **Bandwidth, Gain** | 24-bit ADC, Sampling rate 1000 Hz <br> Bandwidth 40 … 200 Hz (−3 dB), Gain 0 |
| **Data types and sampling rates** | Averaged EMG (online & memory modes) <br>     25 Hz (rectified and averaged from 1000Hz Raw EMG) <br>     1 Hz (online) <br> Raw EMG (optional configuration) <br>     1000 Hz (memory mode only) <br> Inertial IMU data: (optional configuration) <br>     25 Hz (memory modes) <br> (Optional sampling rates 10 Hz, 50 Hz 100 Hz for customized products) |
| **Battery** <br> **Battery life (full charged)** <br> **Charging time from USB** <br> **Readiness time** | Rechargeable Li-ion Polymer Battery (3.7 V, 500 mAh) <br>     ~ 30 hours <br>     ~ 5 hours <br>     ~ 4 weeks |
| **Wireless connectivity** | Bluetooth Low Energy (BLE) <br> Proprietary "Muscle Load Profile" (GATT based profile) <br> Contains transmitter module FCC ID: TFB-1005, CMIIT ID: 2018DJ0015 |
| **Wired connectivity** | USB |
| **Operating temperature** | 0°C … +40°C (32°F … + 104°F) |
| **Humidity** | 10 … 90 % RH (non-condensing) |
| **Water resistance** | Protected against water splashes from top. Do not sink to any fluid. |
| **Dimensions** | ~ 62 x 38 x 15 mm (2.4 x 1.5 x 0.6 inch) |
| **Weight** | ~ 28 g (1 oz) |
| **Recycling** | This product contains rechargeable battery, electronic components and materials. <br> Product must be disposed as electrical and electronic equipment. |
| **Standards and approvals** | CE, FCC, CMIIT, RoHS, WEEE |

**Memory capacity alternative examples:**

| Mbody3 configurations: (for 6ch MShorts) | | |
|---|---|---|
| | Averaged EMG (25Hz) | 30 h |
| | Configured with EMG (25Hz) & IMU (25Hz) | 12 h |
| | Configured with Raw EMG (1000Hz) | 45 min |
| | Configured with Raw EMG (1000Hz) & IMU (1000Hz) | 18 min |
| (for 8ch MShirt) | Averaged EMG (25Hz) | 22 h 30 min |
| (for 3ch MSleeve) | Averaged EMG (25Hz) | 60 h |
| (for 2ch MBelt) | Averaged EMG (25Hz) | 90 h |
| **ErgoAnalysis configuration:** (for 8ch ErgoShirt) | Configured with (25Hz) Averaged EMG & IMU (ACC & Gyro) | 15 h |
| (for 2ch ErgoSleeve) | Configured with (25Hz) Averaged EMG & IMU (ACC & Gyro) | 22 h 30 min |