The Genesys battery-powered Sensor Base Board Ultra is the ultimate in battery powered I/O and user configurability. This base board is capable of fulfilling the requirements of any application that requires battery power, portability, advanced user interface capabilities, generic I/O devices integration and spatial environmental monitoring.

**EXTRA-SENSORY MULTI-MEDIA**
This base board provides a rich user experience in the application of sensing and control. It features a full-colour TFT LCD display in conjunction with audio codec circuitry capable of driving externally connected speakers, digitising analog stereo microphone inputs and connecting to digital microphones. This is complemented by a number of pushbuttons that are able to be used as short-cut keys for commonly used functions or user interface control.

**BATTERY POWERING**
The generous capacity LiPo is charged without physical connection of wires that allowing the base board to be sealed for mobile applications that “get down and dirty”. With a generic Qi charger (e.g. LG Electronics WCP-300) the battery system recharges within hours.

**CHARACTERISTICS SUMMARY**

**SENSORS**
- u.Blox MAX-7W GNSS module
- 9-axis Accelerometer, Gyrometer & Magnetometer
- 1°C Accuracy Temperature Sensor
- 0.4% RH Accuracy Humidity Sensor

**ON-BOARD**
- 1.8” Touch-screen TFT LCD
- Audio codec, Real-time clock
- Contact-less Battery Charging

**DIMENSIONS**
- 68mm x 52mm

**CONNECTIVITY**
- Genesys Modular Stack dual 40-pin connector

Genesys Modular Stack is a technology allowing for the easy interconnection of expansion modules. Genesys Modular Stack compliant modules feature a characteristic pair of board-to-board feedthrough connectors, so that they are infinitely stackable with each module adding new functionality. The Sensor Base Board Ultra is fully compatible with Genesys Modular Stack.
CHARACTERISTICS

GNSS SPECIFICATIONS
- u.Blox MAX-7W GNSS module
- Backup battery 3V 3.4mAh
- LNA front-end amplifier & SAW filter
- On-board chip antenna with UFL connector options

PERIPHERAL SPECIFICATIONS
- 9-axis Accelerometer, Gyrometer & Magnetometer
- 3-axis Accelerometer options available
- Battery-backed realtime clock
- Dual on-board data backup EEPROMs
- EUI-48 48-bit Extended Unique Identifier

CLIMATE SENSORS SPECIFICATIONS
- Temperature: ±1°C Accuracy Temperature Sensor
- Humidity: 0.4% RH Accuracy Humidity Sensor

I/O
- Internal IO breakout header options:
  - 4 GPIO
  - 2 open-drain outputs
  - 4 un-buffered ADC inputs with protection

USER INTERFACE
- 1.8” 128 x 160 pixel touch-screen TFT LCD
- Audio codec with speaker and microphone I/O
- 1 Reset button
- 1 System pushbutton with RGB LED
- 3 optional pushbuttons with RGB LEDs
- Buzzer and vibration motor

BATTERY POWERING
- Type & chemistry: LiPo 3.7V single cell
- Current consumption:
  - 52mA (GPS acquisition)
  - 15mA (Typical)
  - <20μA (Static)
- Discharge time dependent on sensor configuration and duty cycling; typically ranges from 48 to 1500 hours
- 1 to 3 hour charge time (charger dependent)
- “Qi” contactless charging technology; utilises any standard Qi charger device (e.g., LG Electronics WCP-300)
- Optional auxiliary 5V to 12V external powering

ENVIRONMENTAL
- Temperature (operating): -15°C to +55°C
- Temperature (survival): -55°C to +85°C
- Humidity (operating): 95% RH at 50°C

MOUNTING DIMENSION DRAWING