

BODY-WORN MESH TRACKER

TESSERA

The tile each member of the group carries. It reports where you are, lets you check in with one press, and calls for help with another. No phone and no network needed.

Tessera talks over LoRa on the MeshCore network, so messages hop from device to device across the group. It is built to be worn on a pack or vest, to run for days on a cell you can swap in the field, and to be printed and repaired by the people who use it.

46 x 139 x 25

MILLIMETRES, WITHOUT ANTENNA

about 170 g

READY TO WEAR, ESTIMATED

18650

SWAPPABLE CELL, 3500 MAH

IP67

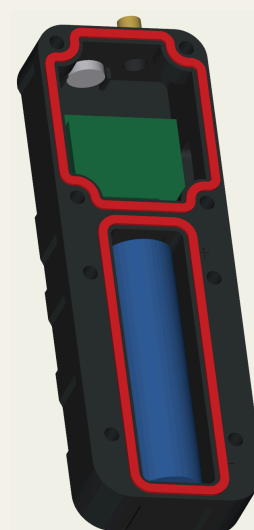
DESIGN TARGET, NOT YET TESTED

868 MHz

LORA, MESHCORE

GNSS

ANTENNA UNDER THE LID



Back with PALS mount. Body open, with gasket cords, cell and radio board.



WHAT IT IS BUILT TO DO

CHECK IN WITH ONE PRESS

A raised button you can find with a glove. The group sees that you are fine and where you are.

ALERTS YOU CAN FEEL

A vibration motor and one status light. Silent and dark when it has to be.

SEALED IN TWO CHAMBERS

Cell and electronics each have their own gasket. Opening the hatch in the rain does not expose the radio.

SOS UNDER A GUARD

The red flap has to be lifted first, so an alarm is a decision and not an accident.

POWER THAT OUTLASTS THE OUTAGE

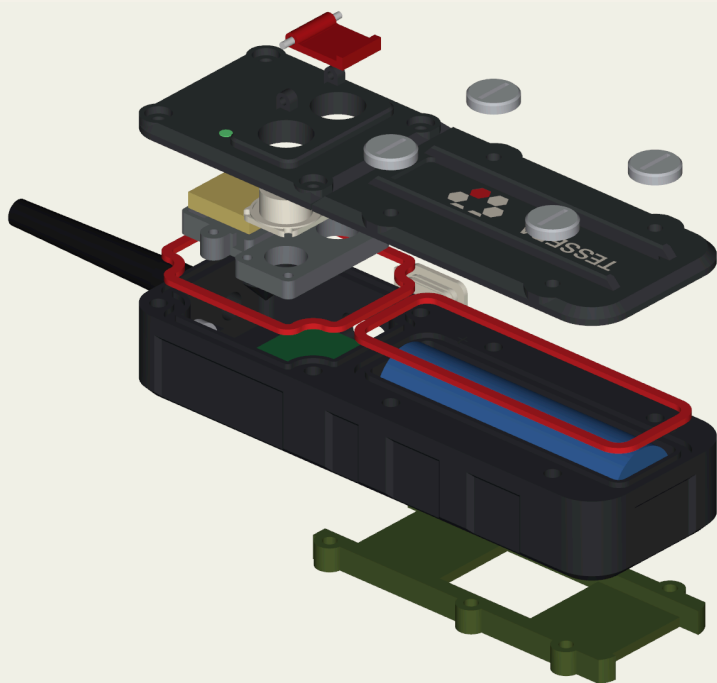
One standard 18650 cell behind its own sealed hatch. Four thumb screws, no tools, about 15 seconds.

WORN, NOT CARRIED

A PALS frame on the back takes a standard 25 mm clip for packs, vests and belts.

SPECIFICATION

RADIO	RAK4631 core: nRF52840 with SX1262 LoRa transceiver, EU868
NETWORK	MeshCore, used with the TesseraMesh app
POSITION	u-blox ZOE-M8Q receiver, 18 mm ceramic patch antenna
ANTENNA	SMA socket. Stub supplied, 17 cm half-wave whip recommended
CONTROLS	Check-in button, guarded SOS button
ALERTS	Vibration motor, one status light
POWER	One protected 18650 cell. A 21700 variant of the case exists (48 x 145 x 28 mm)
CHARGING	USB-C behind a sealing plug, 350 mA. About 10 hours for a full cell
SEALING	Silicone sponge cord gaskets, all screws outside the seals
CASE	3D printed PETG or ASA, no supports. Brass thread inserts, stainless screws
MOUNT	PALS, two bars at 50.8 mm pitch
SIZE	46 x 139 x 24.8 mm, plus 6 mm for the mount
WEIGHT	Printed parts about 76 g. About 170 g with cell, electronics and antenna



From the top: SOS guard and thumb screws, lid and battery hatch, keypad and satellite antenna tray, gasket cords, body with cell and radio board, PALS mount.

STATUS

Tessera is an engineering prototype. The case exists as a CAD model and has not been printed or tested. Weights are estimates, IP67 is a design target, and battery life has not been measured. Everything on this sheet may change.