

User Manual – Satellite Hub

Hivemind

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System components:

- **Satellite Communication Hub** model 2.1 (fig.1)
- Required: 4xAA lithium batteries

Getting Started

1. **Hub mounting:** Position the hub within 10m of the hives/sensors. The hub may be secured either
 - On top of a hive but under a hive strap (fig.1). **Do not strap across the hub label which will block communication.**
 - Under a PLASTIC hive lid using the mounting holes. **Do not mount under a metal lid as this will block the communication signals.**

The Hivemind label must always be facing up to the sky, even if mounted under a plastic lid.

2. **Sensor connection:** For each hive scale or sensor, install and connect it to the hub as specified in its user manual. **This step should be repeated every time sensors are moved in relation to the hub to ensure continued operation.**

3. **Login:** Now browse to hivemind.nz/login and log in (first time you will need to create a password) to see your hives working away. If your hub is suspended, you will see a button labeled "Activate". Click this to start data coming in. Note it may take up to one day before the first data report.

4. **USA customers:** you may opt into the Bee Informed program. Visit "My Account" → "My Details" and scroll down to "Link with Bee Informed" to find out more.



Fig. 1: (above): Satellite communication hub items

Fig. 2: Do not strap over green label (antenna area)



Maintenance

Hub batteries: Unscrew battery compartment and install AA batteries as shown in fig. 2

- Only **lithium** batteries on 4-cell model (alkalines may only last a month or so)
- Lithium or alkaline on 6-cell model: (lithiums will last 35% longer)

Replace cover. Tighten firmly but **do not over-tighten** (0.5 Nm torque). Over-tightening or under-tightening will destroy the hub by water ingress.

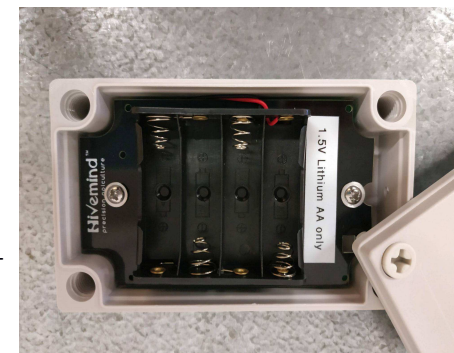


Fig. 2. Battery cover removed

Specifications – Hub

Dimensions: 170 x 85 x 25 mm

Weather proofing: IP67

Operating temperature: -20 to 60°C

Battery life: Life depends on number of sensors reporting. Calculate this at <http://hivemind.nz/batterylife>

4-cell model: typically 4–8 months; 1.5V lithium cells only

6-cell model: alkaline or lithium cells; typically 6–12 months for lithium; 5-9 months for alkaline

Maximum distance device to hub: 10m to 50m typical (signal depends what objects are in between)

Maximum number of sensor devices: 25

Location: Location (via satellite) accurate to within 10m radius

Regulatory Compliance

The satellite transmitter complies assuming a minimum operating distance of 20cm:

- CE (Europe Aus/NZ): ETSI EN 301: 441 V1.1.1, 489-1 V1.8.1(2008-04), 489-20 V1.2.1(2002-11)
- US FCC CFR47 parts 2, 15, and 25, UL913 intrinsically safe for Class I Division 1 Groups A-D
- Canada ICES-003
- EN60950-1:2006 Part 1; 1.7.13 notice: "Caution! Risk of explosion if battery is replaced by an incorrect type. Dispose of used batteries according to their instructions."

FCC Notice: This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. Device contains SM220 FCC ID: U90-SM220

Warranty

1. Purchased product warranty is 12 months from the date of purchase, day / mth / year, as follows. Repair or replacement will be made to any faulty product returned to the purchasing location within that time. Hivemind will bear the cost of repair unless the product has been mistreated or operated outside specification. Hivemind will pay transit costs for only the transit of the product between the purchasing location and the repair facility.
2. Leased products have a perpetual warranty as follows. Hivemind will cover repair and shipping costs for damage from ordinary wear and tear. If the product has been mistreated or operated outside specification then the customer is liable to pay for the cost of the product and return shipping.

Other details of warranty are specified in the Hivemind Terms and Conditions at <http://hivemind.nz/agreement>.

