



## ECHO-C Specifications & Features

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### Overview

- A device for forwarding data between Scout (or ScoutPlus) units and Base or Bridge units
- Communication to/from Scout/ScoutPlus by low-power radio link
- Backup battery supply for continuous operation during power failure up to 6 hours
- Operates in two distinct modes, '*standard*' and '*transport*'

### Functions

- Radio module for collection and verification of radio broadcasts from Scout
- When working in conjunction with 'Transport' Bridge, enables extended distance two-way communication (commands can be sent and responses received) between Scout and PC ('*transport mode*')
- When working in conjunction with Base or 'Standard' Bridge, enables extended distance one-way communication (broadcasts only) between Scout and PC ('*standard mode*')
- Verification of data before retransmission
- Display of operating conditions via front panel:
  - Standard mode;
    - Yellow LED to indicate successful reception and retransmission of radio broadcasts
    - Blue LED to indicate and transmission of its own ID
  - Transport mode:
    - Three LEDs flashing randomly indicate functioning of two-way communications
- Provision of build standard control (software) for each module via communication modules
- Indication of successful broadcast rate sent at regular intervals to any connected Base or Bridge
- Automatic switching between '*standard mode*' and '*transport mode*' controlled by presence of 'Transport Bridge' (i.e. unit will automatically switch to *transport mode* if in radio reception of Transport Bridge or another Echip-C working in *Transport mode*)

### Data

- Ability to rebroadcast (one-way communication) messages from an unlimited number of 'un-routed' Scouts, to be received by further Echo units or by Bridge or Base unit.
- Up to five Echos can form a continuous path for rebroadcasts.
- '**Transport Mode' Only**
  - Maintaining of routing information (two-way communications) for up to 64 Scout (or ScoutPlus) units in a radio network. (In this context, ScoutPlus units count as only one unit although they have two sensors – this is unlike the limit of 64 sensors in a Base)
  - Automatic generation of routing information depending on other Echos in installed system.
  - Routed Scouts can be sent commands for calibration and download purposes
  - At least three Echo units can form part of a continuous routing path for 2-way communications.
  - 2-way communications only possible when working in conjunction with Transport Bridge (not with Base or Standard Bridge)



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### Interfaces

- No communications connections other than via radio. Mains power connection only.

### Low-power radio module.

- Frequency: 433.9 MHz (UK/Europe), licence-free band. ETSI 300-220 standard. Power: max 10mW (+10dBm).
- Transmitter duty cycle <10% (ETSI 300-220 standard)

### Environment / Mechanical / Electrical

- Dimensions: Body length 120mm plus antenna 150mm approx.
- Case: ABS with rubber over-moulding for sealing antenna and LEDs
- Weight: 80g
- Operating temp. range)0C to +40C, humidity 0-90%.
- Dust / Waterproofing: IP67
- Battery: Rechargeable NiMH providing operational backup for at least 6 hours.
- Mains powered 220/240V 50/60Hz 120mW average. Cable length 1.5 metres

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