

SPECIFICATION

GENERAL

- | | |
|--|---|
| • Power supply requirement: | Supplied from the transceiver |
| • Operating temperature range: | −30°C to +60°C, −22°F to +140°F |
| • Dimensions (cable/joint/belt clip not included): | |
| HM-169/HM-184/HM-184H | 62 (W) × 89 (H) × 40 (D) mm
2.44 (W) × 3.5 (H) × 1.57 (D) inches |
| HM-170GP/HM-171GP/HM-171GPW/
HM-233GP | 62 (W) × 105 (H) × 40 (D) mm
2.44 (W) × 4.13 (H) × 1.57 (D) inches |
| • Curly cable length: | Approximately 30 cm (12 inches) |
| • Weight (cable/joint/belt clip included): | |
| HM-169 | Approximately 200 g (7.1 oz) |
| HM-170GP/HM-171GP/HM-171GPW/
HM-233GP | Approximately 220 g (7.8 oz) |
| HM-184/HM-184H | Approximately 210 g (7.4 oz) |
| • Speaker: | |
| HM-169/HM-184/HM-170GP/HM-171GP/
HM-171GPW | Impedance 8 Ω
Rated input 1 W at 5% distortion (maximum 2 W) |
| HM-184H/HM-233GP | Impedance 8 Ω
Rated input 1.5 W at 5% distortion (maximum 2 W) |

GPS RECEIVER

- TTFF (Time to First Fix): Cold start 50 seconds typical
Hot start 4 seconds typical

All stated specifications are subject to change without notice or obligation.

CE AND DOC



CE Hereby, Icom Inc. declares that the versions of HM-170GP/HM-171GP/HM-171GPW/HM-233GP which have the “CE” symbol on the product, comply with the essential requirements of the Radio Equipment Directive, 2014/53/EU, and the restriction of the use of certain hazardous substances in electrical and electronic equipment Directive, 2011/65/EU. The full text of the EU declaration of conformity is available at the following internet address:
<http://www.icom.co.jp/world/support>

DISPOSAL



 The crossed-out wheeled-bin symbol on your product, literature, or packaging reminds you that in the European Union, all electrical and electronic products, batteries, and accumulators (rechargeable batteries) must be taken to designated collection locations at the end of their working life. Do not dispose of these products as unsorted municipal waste. Dispose of them according to the laws in your area.



INSTRUCTIONS

WATERPROOF SPEAKER MICROPHONES

HM-169

HM-184 HM-184H

GPS SPEAKER MICROPHONES

HM-170GP HM-171GP

HM-171GPW HM-233GP

PRECAUTIONS

⚠ WARNING! NEVER immerse the connector in water. If the connector becomes wet, be sure to dry before attaching it to the transceiver.

CAUTION: DO NOT attach the speaker-microphone's connector securely to prevent an accidental radio dropping or water intrusion in the connector. (Refer to the transceiver's instruction manual or operating guide for installation details.)

CAUTION: DO NOT use or place the microphone in areas with temperatures below -30°C or above $+60^{\circ}\text{C}$ (-22°F to $+140^{\circ}\text{F}$).

CAUTION: DO NOT use harsh solvents such as benzine or alcohol to clean the microphone, as they will damage the microphone's surfaces.

CAUTION: DO NOT modify the microphone for any reason. Repair should be done at authorized Icom service center only. Waterproofing cannot be guaranteed if you open the microphone yourself, or have it done at a non-authorized dealer/service center.

BE CAREFUL! The microphone meets IPX7 requirements (except HM-171GP), for waterproof protection. However, once the microphone has been dropped, waterproof protection cannot be guaranteed because of possible damage to the microphone or the waterproof seal.

Use with specified Icom transceivers only. Other manufacturer's transceivers have different pin assignments and may damage the transceiver or microphone. While connecting the GPS speaker microphones to the transceiver and using the GPS automatic transmit function, the transceiver automatically transmits at every setting interval. This is normal and does not indicate an equipment malfunction.

Be sure to turn OFF the transceiver when attaching to the transceiver or detaching from the transceiver. Otherwise a malfunction may occur, or may damage the transceiver or microphone.

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FEATURES

- The microphone has outstanding protection against dust and water that is equivalent to IP67 (1 m (3 feet)/30 minutes).
The microphone can withstand submersion in 1 m (3 feet) depth of water for up to 30 minutes and has dust-tight construction that prevents the ingress of dust (except HM-171GP).
- Improved speaker audio quality and loudness.
- Includes high-performance GPS receiver.
(HM-170GP/HM-171GP/HM-171GPW/HM-233GP)

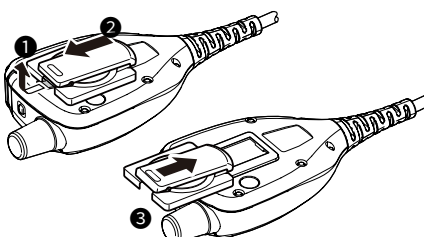
ATTACHING/DETACHING BELT CLIP

To detach the belt clip:

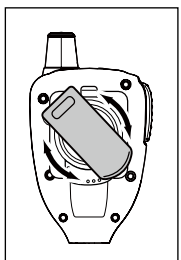
- 1) Pinch the clip (❶).
- 2) Then slide the belt clip in the direction of the arrow (❷).

To attach the belt clip:

Slide the belt clip in the direction of the arrow (3) until the belt clip is locked and makes a 'click' sound.



**HM-170GP/HM-171GP/HM-171GPW/
HM-233GP**



The clip rotates
360 degrees in
45 degree steps.

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Count on us!

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PANEL DESCRIPTION

① PTT SWITCH

Hold down to transmit.
Release to receive.

② TOP KEY

(For only the HM-170GP/HM-171GP/HM-171GPW/
HM-233GP)

HM-170GP/HM-171GP/HM-171GPW/HM-233GP:

Functions assigned by your dealer. It differs depending
on the transceivers (Refer to the transceiver's instruction
manual or operating guide).

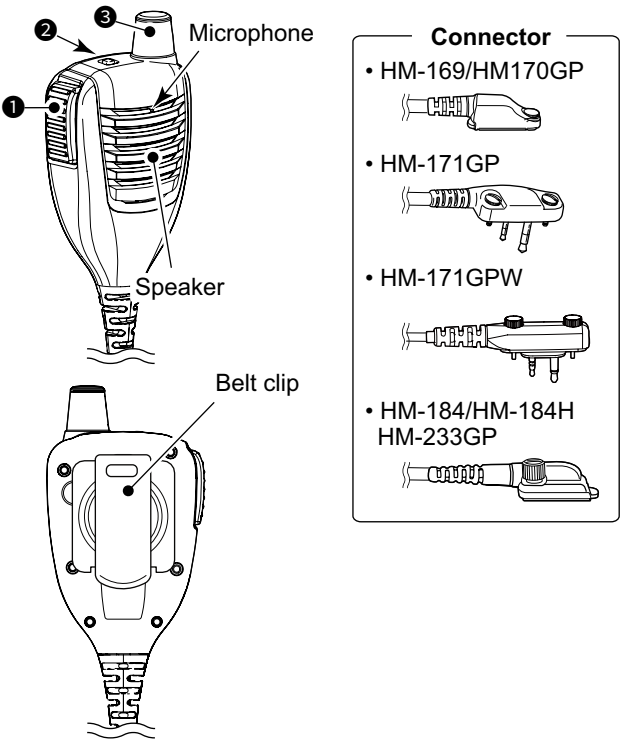
HM-171GP/HM-171GPW:

- The key lights during normal operation.
- The key blinks while receiving GPS signals.

③ GPS ANTENNA

(For only the HM-170GP/HM-171GP/HM-171GPW/
HM-233GP)

HM-170GP/HM-171GP/HM-171GPW/HM-233GP



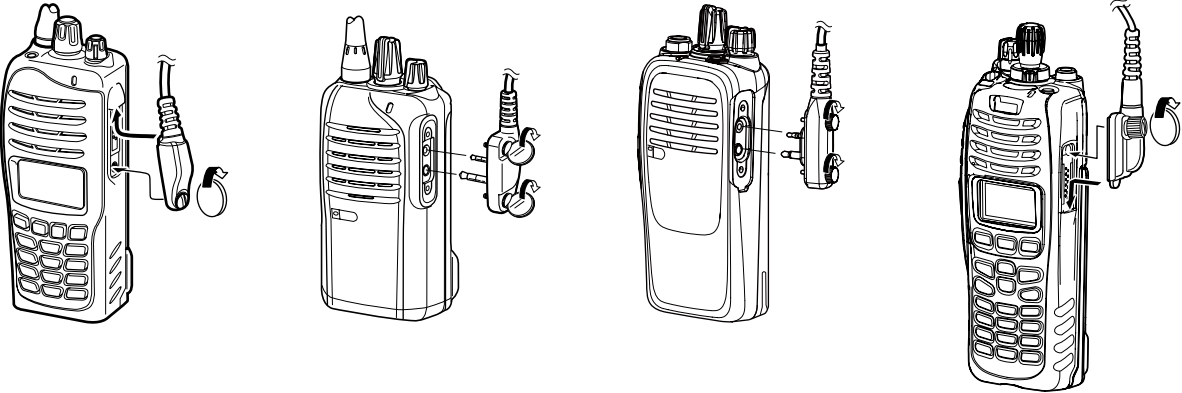
Connection

• HM-169/HM170GP

• HM-171GP

• HM-171GPW

• HM-184/HM-184H/HM-233GP



ATTENTION ABOUT THE GPS RECEIVER

For only the HM-170GP, HM-171GP, HM-171GPW,
and HM-233GP.

About calculating position

The GPS receiver receives signals from GPS satellites. It calculates its position by the orbit information of the GPS satellites and needs to measure the distance between itself and three or more GPS satellites to obtain a reliable position. A receiver acquires all available satellites when it is first powered up, powered off for a long time, or powered up again at a place a long way from when it was last powered off. Normally, it takes approximately 1 minute for determining a position.

In places where the GPS signals cannot reach the GPS receiver such as in caves, underground, indoors, under overpasses, beside tall buildings, or near any other devices that cause electronic interference, the GPS receiver may show position errors (misplacement) or no position reading at all.

As the satellites are continuously moving, measurement of the position or time by the GPS receiver may take a while, and/or no position reading can be made in some instances. Even if the GPS receiver receives signals from three or more satellites, it may take a longer time to determine a position depending on the satellite locations.

Radio wave reception from the satellites is not only blocked by buildings and trees, but also by the human body in some instances. Therefore the GPS antenna should be kept as far away from the body as possible for best reception.

About Almanac and Ephemeris Data

To reduce the time to calculate position, the GPS receiver stores the Almanac Data (the orbit course/orbital parameters of the satellites) in its internal memory. When the GPS receiver is left with the power OFF for a long time, the GPS receiver needs to acquire the Almanac Data again. In this case, the receiver starts as a "cold" start.

The GPS receiver stores Ephemeris Data of the satellite's orbital course, and refers to this data when the GPS receiver is turned OFF for a short time. This is called a "hot" start, and uses the Ephemeris Data that is valid to within less than 4 hours.

Location precision

The GPS receiver automatically calculates its position when the GPS receiver receives GPS signals from three or more GPS satellites.

The GPS satellite's measurement error about ± 10 m, however this can vary up to several hundred meters depending on the surrounding environment.

When the GPS receiver is powered up again at a place a long way from when it was last powered off, the first calculation of its position may be incorrect in some cases.

The GPS information and its accuracy varies depends on the GPS system being acquired, place and time.

Generally a GPS receiver cannot obtain a clear signal from the satellite when indoors. As a result, the GPS receiver may show position data several hundred meters from its actual position, or may show no position reading at all.

About NMEA sentence

The GPS receiver outputs the last memorized NMEA sentence if the current position data cannot be received due to the GPS signal being blocked by a building, car roof, etc., or it takes a long time to acquire the position data from a cold start. In this case, the NMEA sentence information may also include an "invalid" indication.

About Condensation

If condensation appears on the outer casing of the GPS speaker microphone due to a sudden change in temperature (e.g. brought to a warm room from a cold place), it is likely condensation has also built-up on the inside of the microphone. In this case, keep the microphone with power OFF at room temperature for about 1 hour. Do not turn ON the microphone until the condensation disappears, as this will damage the microphone.