SCU-31
External GPS Antenna

The SCU-31 is 66 channel GPS Antenna supplied with 49 feet (15 m) of cable that plugs into your compatible Standard Horizon VHF radio to enable AIS and DSC. The GPS antenna delivers accuracy better than three meters by decoding the GPS correction signals from the SBAS (Satellite Based Augmentation System). Please refer to the STANDARD HORIZON products catalog or web site for compatibility.

Owner's Manual
The details of the installation and operation of the SCU-31 are included in the owner’s manual of the compatible fixed mount radio, or can be downloaded at www.standardhorizon.com.

Supplied Accessories
GPS Antenna Unit (49 feet (15 m) cable) .............................................................................................. 1
Antenna Base (Socket, Part number: RA6054200) .............................................................................. 1
Screws (M3X8 SUS, Part number: U20308020) .................................................................................. 3

Installing
The SCU-31 is designed to be mounted on a base, installed on an extension pole or flush mounted.

Choose a location for the antenna that has a clear view of the sky and is not located within 3 feet of radar or other transmitting antenna. Ensure there are no major obstructions or fixtures in the immediate proximity to the antenna. The antenna relies on direct "line of sight" satellite reception. If you are unsure of the location, temporarily mount the antenna to verify correct operation. If mounted close to a radar, turn on the radar and check the GPS signal strength using the GPS Status Page on the VHF.

Base Mounting the antenna
The thread used on the base of antenna (1 inch, 14 TPI) is an industry standard used on a wide range of commercially available mounting brackets or extension poles. Due to the manufacturing process of the mounting brackets, the antenna may not tighten all the way down onto all the threads. This is of no concern however as the antenna must be tightened until the antenna stops rotating.

1. When passing the antenna cable through a mounting bracket or extension pole, make sure to pass the cable through the antenna base.

2. Mount the antenna base to the antenna using the supplied three screws.
3. Screw the antenna base to the mounting bracket or extension pole.
4. Install the mounting bracket or extension pole in a location that has a clear view of the sky.

Flush Mounting the antenna
NOTE: Before drilling the mounting holes, it is recommended to test the GPS antenna satellite signal strength in the desired location.

1. To ease installation use the supplied flush mount template.
2. Apply the flush mounting template sticker.
3. Drill the 0.78" (20 mm) and 0.13" (3.2 mm) holes, and remove the template.
4. Insert the cable into the 0.78" (20 mm) hole and route to the transceiver.
5. Apply a small amount of RTV to the underside of the antenna.
6. Place the antenna and screw into place using the supplied screws.

Use this template to mark the location where the hole for the flush mount is to be cut.

NOTES:
• When routing the antenna cable along the outside of the extension pole, pass the cable through the groove as shown by the dotted lines in the figure on the right. (Please cut the blank panel with a long-nose pliers.)
• The antenna cable can be cut and spliced to ease installation. Care must be taken when reconnecting the antenna cable to protect from water and corrosion.

Safety Precautions (Be Sure to Read)
Be sure to read the safety precautions of Owner’s Manual to use this product safely.
### Pin Assignment

1. DC INPUT (+10 to 35 VDC)
2. GPS DATA OUTPUT (+)
3. GND

### Specifications

- **Supply voltage**: Normal: 13.8 VDC (Supplied from the transceiver)  
  Operating: 10 - 35 VDC
- **Power consumption**: 0.3 W (Max.)
- **Operating Temperature**: −4 °F to +140 °F (−20 °C to +60 °C)
- **Storage Temperature**: −22 °F to +185 °F (−30 °C to +85 °C)
- **Receiving Frequency**: 1575.42 MHz
- **Receiving Code**: GPS: L1 C/A code  
  SBAS: WAAS, EGNOS, MSAS, GAGAN  
  QZSS
- **Receiver Channels**: 66 channels
- **Sensitivity**: Less than −147 dBm
- **Time to First Fix**:  
  - Hot start (Open Sky): 1 sec (approx.)  
  - Cold start (Open Sky): 33 sec (typical)
- **Geodetic Datum**: WGS84
- **Position Accuracy**: 2.5 m (typical)
- **NMEA 0183 Output**: 4800 bps, 8 bits, no parity, 1 stop bit  
  GGA, GLL, RMC, GSA and GSV
- **Dimensions**: 85 x 30 mm in height (flush mounted) or 60 mm on base mount
- **Weight**: 3.2 oz (90 g)
- **Cable**: 49 feet (15 m)

### EU Declaration of Conformity

We, Yaesu Musen Co. Ltd of Tokyo, Japan, hereby declare that this equipment type SCU-31 is in full compliance with EU Radio Equipment Directive 2014/53/EU. The full text of the Declaration of Conformity for this product is available to view at: //www.yaesu.com/jp/red