CONFIDENTIAL & PROPRIETARY

BS-SB-1 v.0r1
Base Station



USER GUIDE

- Reinforced
- Completely water tight
- Long service life
- Highly robust communication protocol
- Easy to install

The BS-SB-1 base station is an autonomous transceiver that is used primarily for the identification, control and management of assets using RF (radio frequencies). The base station may be used in conjunction with active transponders which may be affixed to assets with which it can communicate in order to collect data.

Description of the system;

The base station system has been developped with the goal of providing the following services.

- Data transfer, logging and Telemetrie
- Temperature monitoring
- Humidity monitoring
- Automated inventory management
- Automated fleet management

HOUSING Installation guidelines;

The base station must be installed by qualified personnel.

The housing must be affixed to a solid surface using hardware that is rust resistante.

The entire mating surface must be used in order to ensure a solid installation.

The housing must be installed (plumb and level).

ANTENNA Installation guidelines;

The antenna must be installed by qualified personel.

Ensure that the antenna is affixed to a stable and plumb mast or pole.

The installation must be done using (U-clamps) of the proper size and fit.

Ensure that the antenna is fitted to a pole that is porperly grounded.

Ensrue that there is sufficient clearance from electrical wires.

Using the base staiton;

PRIOR to initialization ensure that the base station, antenna and coaxial cable are installed. Upon initialisation the base station will register on the network and create a secure connection to the central server. This is an automated process and require no interaction.

1) Simply power up the unit and observe the L.E.D. indicators.
2) 1st L.E.D. must be red indicating POWER ON
3) 2nd L.E.D. must be GREEN (solid) indicating modem link
4) 3rd L.E.D. must be GREEN (flashing) indicating network activity
5) 4th L.E.D. must be GREEN (solid) indicating network connection

Once you have observed that L.E.D. activity is as per the above guidelines you may now close and lock the enclosure. Ensure that the door and all other oppenings are water tight and locked.

UPDATES;

1) Start a communication and update session Using the NIPT (Network Interface & Protocol Terminal).
2) Enter the basestation ID in the connect/setup dialog box and press enter. (automated-handshake)
3) Select the UPDATE operation from the check list and click (execute). This will start an automated update script that will run and complete the update process.
4) Upon completion the GUI will provide a “pop up” indicating that the update has been successfully completed.

REMOTE (Re-start / Re-initialization);

The Re-start function is used primarily as a preventative measure. A clean Re-start is required in order to flush all of the system buffers. The Re-initialization function is used in order to re-name and change a base station ID.

Re-START:

1) Start a communication and update session Using the NIPT (Network Interface & Protocol Terminal).
2) Enter the basestation ID in the connect/setup dialog box and press enter. (automated-handshake)
3) Select the Re-Start operation from the check list and click (execute). This will start an automated re-start script that will run and complete the process.
4) Once the basestation has Re-started it will re-connect with NIPT. The GUI will the provide a “pop up” indicating that the Re-start has been successfully completed.

Re-INITIALIZATION:

1) Start a communication and update session Using the NIPT (Network Interface & Protocol Terminal).
2) Enter the basestation ID in the connect/setup dialog box and press enter. (automated-handshake)
3) Select the Re-initialization operation from the check list and click (execute). This will start an automated Re-initialisation script that will run and complete the process.
4) Once the basestation has re-started it will re-connect with NIPT. The GUI will the provide a “pop up” indicating that the Re-initialization has been successfully completed.

WARNINGS;

- This equipement may only be used and serviced by authorized personnel
- Disconnect ALL electrical and coaxial connections to the base station before servicing
- Follow all applicable regulatory and safety guidelines when choosing a location
- Do not install the base station on semi-rigid surfaces
- Do not install the base station on moving structures
- Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
- This equipment must be professionally installed.
- The antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm from the radiating element to any nearby persons.
- This device and its antenna must not be co-located or operated in conjunction with any other antenna or transmitter.”
- This device has been designed to operate with the antennas listed below, and having a maximum gain of 8 dBi (5.86dBd). Antennas not included in this list or having a gain greater than 8 dBi (5.86dBd) are strictly prohibited for use with this device. The required antenna impedance is 50 ohms.
- The cable loss from the antenna terminal on this equipment to the external antenna must greater than or equal to 4 dB.

Antenna and RF cable (SPECIFICATIONS):

Model # : HGV-906U or HG908U-PRO

Manufacturer : L-COM

RF Gain : (HG-906U) @ 6dBi (HG-908U-PRO) @ 8dBi

RF connector type: Type N female

RF Cable type: LMR-400 or LMR-600

RF cable length: (LMR-400) @ 100’ feet (LMR-600) @ 200’ feet

Rated RF cable loss: (LMR-400) = 4.25dB @ 100 feet (LMR-600) = 5dB @ 200 feet

Technical Specifications

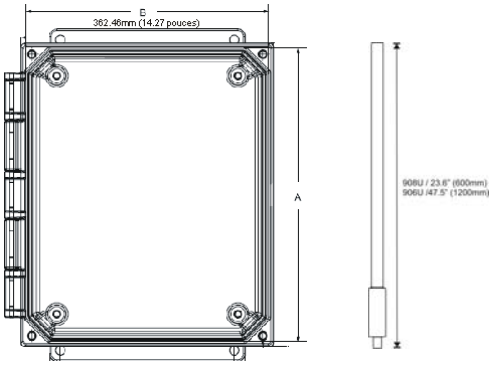
General information

Dimensions (enclosure)

Height :	520.70 mm (20.50 inches)
Width :	413.25 mm (16.27 inches)
Length :	257.30 mm (10.13 inches)
Material :	Fiberglass reinforced ABS plastic
Color :	White
Antenna :	#HGV- 906U
	#HG908U-PRO

Batterie

Type :	Sealed GEL
Chemistry :	Lead-Acide
Charge time :	24hrs (initial charge)
Capacity & Voltage	35Ah ~ 12Vdc



Operating ratings

Operating temperature :	-40 +85°C
Environmental norm :	IP66

Specifications (RADIO)

Receiver

Freq. :	902.000MHz ~ 928.000MHz
Modulation :	FH / 2FSK

Transmitter

Freq. :	902.000MHz ~ 928.000MHz
Modulation :	FH / 2FSK
Encoding :	Variable encod.

Electrical

Primary :	110~120Vac – 50~60Hz
Internal:	12Vdc
Total power:	50 Watt Peak 0.5%:100 Watt

Certifications

Industry Canada	RSS-210 Issue 7
FCC (USA)	Part 15