

THEORY OF OPERATION FOR THE SKYLINKS HEAD UNIT (JDGT-0001)

The Skylinks Head Unit mounts on a golfcart and allows course information to be displayed for the golfer, while simultaneously providing course management a tool for monitoring flow-of-play. When provided with appropriate external antenna and power connections, the unit contains all the circuitry necessary for achieving a raw GPS fix from the satellite constellation, applying differential corrections to improve the fix, communicating location information to the base station and displaying to the user graphical information about the hole being played.

A GPS daughterboard in the Head Unit receives the L1 signal from the satellite constellation by means of an active antenna mounted near the cart roof. A UHF transceiver daughterboard, operating in the 450-470MHz band through a half-wave antenna also on the cart roof, provides half-duplex communication with a Skylinks GPS Base Station located at a surveyed location on or near the course. Base messages contain system timing information, updated differential corrections and, if desired, text messages from course management to the golfing parties. Head Unit messages back to the Base contain location updates and messages regarding the quality of data received.