

## **Communications:**

### **Communication: Safety Pilot, Observer, and Ground Control System Operator.**

While the Maxi Joker 3 UAV platform is capable of fully autonomous flight, a dedicated safety pilots shall always be in position to assume immediate control through the secondary 72 MHz link. A GCS operator constantly monitors the UAV's status. Flight plans are maintained by the GCS operator. The safety pilot stands within 15 feet of the ground control system (GCS) operator and has direct verbal communication regarding the UAV's health and operational status. At least one additional observer - also standing within 15 feet of the safety pilot and GCS operator - constantly monitors the airspace within the vicinity of the farm for other aircraft. If another aircraft is observed in the same airspace, the observer informs both pilots and the GCS operator, and the UAV is immediately re-directed to decrease altitude and land. The safety pilot has the authority and responsibility to take manual control, if necessary, to avoid any hazard. All flights are conducted within a range of 2500 ft of the safety pilot in any direction. The UAVs are always kept within the line-of-sight of the pilot and observers.

**Communication: Ground Control System with UAV.** The UAV is in constant communication with the ground station via two separate RF links, the primary 900MHz autopilot link and the secondary 72 MHz R/C link. A safety pilot can take manual control of the UAV through the 72 MHz R/C link. Flight data is transmitted from the UAV to the operator interface at 25 Hz and the GCS software includes essential visible and audible alarms to indicate changes in status (e.g., if a specified altitude is exceeded, battery life etc.)