

## **Exhibit S: Installation Info**

**FCC ID: QYT-4120**

The following paragraphs are the antenna related part of the IDmicro handbook for installing 4120 interrogators and antennas. (Currently in development)

Allowable antennas and recommended coax:

IDmicro provides antennas that have been certified and do not require additional testing when used with a cable of at least 3'. The acceptable antennas at this time are the 8 dB linearly polarized antenna from Antennas America (Now Arc Wireless) that are approximately 4" square, and the 1" square Ma/Com antennas that are circularly polarized.

For long range and focused read zone, the higher gain linearly polarized antennas are most suitable. The constraint is that with the linear polarization, both transmit and receive antennas must be aligned (I.E. horizontal, vertical, etc..), and the tag antenna must be aligned as well. For IDmicro "10ML" key FOB, when the physical tag is held vertically, the tag antennas are horizontal.

For shorter range and wider field of view, the Ma/Com antennas are recommended. An additional feature of this antenna is the circular polarization that eliminates the antenna alignment constraint.

Measurement of the output power at manufacturing is conducted to ensure that the unit is properly compensated and the output amplifiers are not being driven into saturation. For this reason, the units are spec'd at 28dBm and the 8dB linearly polarized antenna will be well within the FCC guidelines.

Given a typical installation, we recommend measurement of the power at the 4120 and using the channels with slightly higher power for the longer cable runs and slightly lower power for the shorter cable runs. The power differences come from the number of switches required to get to each of the 6 connectors. Cable runs of over 50' are possible but the power loss in the cable will measurably reduce the power to the antenna and thus noticeably reduce range. Use of LMR 400 (Times Microwave 0.49") coaxial cable is recommended for all coax runs over 10'. The LMR 400 can be ordered in superflex for ease of bending as well as the "DB" version that provides the capability for direct burial. Operating at less than 26 dBm at the antenna is oftentimes unavoidable and while the range is affected, 20' range is usually obtainable.

Primary Requirement for Mounting Antennas:

To maintain compliance with FCC rules and regulations, the 4120 must be installed with IDmicro provided antennas that have been tested and certified. In addition, previous analysis indicates that an isolation or stand off of 13" for the 8 dB gain antennas

and 7" for the smaller Ma/Com antennas is required. The isolation can be provided in one of two manners. First is a physical boundary (such as a dome) of plastic or other RF transparent material, and the second is to mount the antennas above or out of the area where a person may be. Mounting the transmit antenna at a height of 8' is generally adequate, particularly if the space under the antenna is occupied by an object. As a rule of thumb, mounting locations where a very tall person cannot touch within 13" of the transmit antenna either by height alone or a combination of height and isolation of the mounting area is required.

IDmicro can provide enclosures to provide this isolation. The enclosures are plastic boxes that provide both physical isolation and protection from the environment. In addition to providing isolation for people, enclosures are recommended for applications where visual appearance is important to the customer or in environments where connectors and mounts can be adversely affected by weather over time.