Technical Note 055

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Options for the RKD-RFA-200

Tucor's radio remote control for the RKD, the RKD-RFA-200, ships standard with a 6" mini-whip antenna mounted directly to the top of the enclosure. There may be some situations where a different configuration is desired.

There are various concerns when evaluating radio communications. Among these are transmission power losses, RFI leakage, and antenna gain. Obviously, when needing an alternative configuration there is usually a reason for changing. This can be due to poor reception in some areas, the desire to mount the enclosure inside and the antenna outside, etc. Needing consideration are possible FCC requirements for the frequencies affected– in the case of the RFA-RKD, the so-called MURS frequencies – which may legally limit the available choices. Finally, vendors change their offerings so rapidly in the real world that it's very difficult to create a product offering that stays relatively current. Thus, many changing variables are involved in selecting the proper components.

These variables make it impractical to provide a "one-size-fits-all" solution for alternate configurations. One possibility for this difficulty is to supply the basic information that one would need to find and configure his own system. Another option is to provide a worksheet that might allow Tucor to suggest alternatives. The first is addressed as follows:

Parameter	Value
Maximum Permitted Power Output	2 Watts
Antenna cable type	RG-58
Transmitter output connector	BNC
Transmitter frequency (as shipped)	154.6000 MHz
Alternative frequencies	151.820 MHz 151.880 MHz 151.940 MHz 154.570 MHz
Coax cable losses	http://www.ocarc.ca/coax.htm

Alternatively, if you wish Tucor to provide a quote for the components, please provide the following information (this form may be faxed to Tucor if desired):

Parameter	Value
Antenna mounting E.g.: Pole, mag base, etc.	
Antenna design E.g.:Omni, dipole, yagi, etc.	
Antenna cable length	
Antenna location E.g., indoor, outdoor, etc.	

Please bear these factors in mind:

- The more information you can supply, the more likely the result will satisfy you.
- Antenna mounting requires familiarity with local codes and safety procedures. Be careful! And some antennas need various "environments", such as a "ground plane".
- Antenna design will radically affect the handheld radio reception. For example, a Yagi antenna may increase reception but it is very directional. See, e.g., http://www.tscm.com/radiapat.pdf#search=%22antenna%20radiation%20patterns%22 for a discussion, or do a web search for "antenna radiation patterns".
- If the desire is to mount the antenna at a higher location, it may be preferable to move the whole enclosure to a higher location. By far the greater signal loss occurs in the cable from the antenna to the transmitter (the RG-58 cable); see http://www.ocarc.ca/coax.htm. Conversely, the cable from the RKD-RFA is a serial data signal (RS-232), which may be extended quite a way without affecting the radio's performance.
- Tucor cannot provide demo components for testing. Please be sure that the components ordered will be suitable for your installation. All components are tested prior to shipment : returns are not permitted.