

Application 3302

DEPLOYMENT TIPS

This document provides tips for deployment of ENCOM Spread Spectrum Wireless systems. There are a number of oversights that are commonly made during system programming that can create a troubleshooting nightmare. Remember that the radio system is meant to provide communication for some other system that may have its own set of parameters.



Wireless System Design Overview

1. Perform Site Survey prior to deployment.
2. Always use Yagi directional antennas at all remote sites.
3. Use Yagi Antenna at master site whenever possible (note: typical antenna spread 40°).
4. Minimize RF cable lengths.
5. Optimize antenna location to avoid obstructions.
6. Maximize antenna heights.
7. Use a repeater to extend range of system.

Radio Programming

1. **Program and test** radios in lab using **ControlPAK™** software prior to field deployment.
2. **Unit Address:** ensure that all REMOTE RADIOS contain unique unit addresses.
3. **Hop Pattern:** all radios within a system must have the same hop pattern.
4. Different systems must have different hop patterns.
5. **Baud Rate:** confirm baud rate (for example, 9600 baud) and data format settings.



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Serial Data Communications Systems

(Traffic Controllers, Traffic Detectors, Variable Message Signs, etc.)

Remote Devices / Local Controllers

1. **Set Unit Addresses:** confirm the correct addresses are entered and saved into the remote devices.
2. **Baud Rate:** confirm the correct baud rate is set in the remote device.
3. **Enable Communications:** ensure that the communications port is enabled on the remote device.
4. **Monitor TX & RX indicators.**

Master / Central Computer

1. **Enable Communications At Master.** Within the master controller or central computer, new sites must be enabled within the communication system.
2. **Configure RESPONSE TIME-OUT DELAY.** In some systems, adding wireless communications can cause minor delays in the data timing called "latency". To accommodate this, the time-out delay can be extended in the master device. This time should be at least 150ms if possible.
3. **Confirm Telemetry Settings:** confirm all parameters that control the telemetry within the system. ENCOM typically will provide complete documentation of all necessary settings.



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