



Unparalleled Performance in Industrial Wireless Data Communication

- Advanced frequency hopping technology ensures unsurpassed performance
- Unparalleled reliability in short or long range data communication
- Exceptional immunity to EMI/RFI
- No FCC./DOC site licence required
- Eliminates costly site surveys
- Extended range of 20 miles with line-of-site antenna
- Ideal for PLC, SCADA and DCS communications where system integrity is critical

The use of wireless data communications in automation systems can reduce project costs and improve productivity. But not all spread spectrum technologies are created equal. Choosing the wrong technology can lead to unreliable communications and system problems. Smart Spectrum™ uses advanced frequency hopping technology for unparalleled reliability in industrial applications. This technology is ideal for PLC, SCADA and DCS communications where system integrity is critical.

Smart Spectrum uses a unique combination of RF attributes to achieve this high level of performance:

- Algorithmic frequency hopping over 112 channels
- High RF data rate of 144 KBPS—exceeding most system data rate requirements and;
- 32 bit CRC forward error correction.

Smart Spectrum radio modems from Data-Linc Group provide the ultimate in reliable wireless data communications. In addition to superior RF performance, Data-Linc Group radio modems provide PLC interface/protocol support, industrial-grade construction, built-in surge protection and easy-to-use diagnostics. Additionally, Data-Linc Group provides system design engineering based on our many years of experience with industrial data communication applications.

Why is RF data rate important? The RF speed at which radio modems communicate determines the overall performance level. With frequency hopping modems, the RF data rate represents the fastest possible baud rate with no interference. However, as interference is encountered, the effective data rate decreases.

For example, a radio modem's RF data rate is 22 Kbps, then the effective data rate with 75% interference may be as slow as 4.8 Kbps. If the RF data rate is 144 Kbps, then the effective data rate with 75% band interference is 28.8 Kbps. The high RF data rate provides a reserve of performance to ensure communication integrity.

Why use frequency hopping? Spread spectrum radio modems typically use one of two spreading methods: Frequency Hopping or Direct Sequence. Choosing the best method for your application is an important step toward ensuring reliable data transmission.

Frequency Hopping takes incoming data and breaks it down into smaller individual packets that are then sent to separate frequencies (with each packet error-checked). Once the packets have been transmitted, the data is recompiled in its original form. If a packet cannot be successfully sent on a given frequency, it is resent on another.