



INfinity 510 Upgrade Highlights

Overview

The INfinity 510 from Sirit has become renowned for outstanding performance since its introduction in 2006. With rapidly evolving end user requirements and the need for additional functionality, Sirit's engineering team has developed and released an upgraded version of the firmware (V 2.0) to further extend the IN510s industry-leading feature set. Version 2.0 is fully compatible with all production hardware versions of the IN510. The previous firmware release was version 1.4 originally released in May of 2007.

Because the IN510 has been designed on a software radio platform, major updates and enhancements of this nature are seamless and painless for Sirit customers. This was an important design criterion for the IN510 because RFID technology continues to evolve at a rapid pace. We saw the software radio platform as a way to 'future-proof' this product for our customers.

Regional regulatory compatibilities added are Australia, China, Israel, South Africa and Taiwan, bringing the total to eighteen regions. In March 2008, Sirit received its compliance certificate from the State Radio Regulation Committee ("SRRC") in China which confirms the IN510 meets the qualifications of compliance under the operational bandwidth, interoperability and performance standards established in March 2007.

The new firmware includes advancements in Sirit's proprietary tag acquisition algorithms, enhancing performance in tag singulation capabilities and reader sensitivity. In addition, the Dense Reader Mode interference tolerance has been further improved to new benchmark levels for the industry. The IN510 continues to be the only UHF reader with EPCglobal Interoperability certification for use in Dense Reader Mode under ETSI conditions.

New features added to the IN510 include support for the EPC Gen 2 custom commands built into NXP's UCODE G2XM and G2XL chips. The custom commands extend the functionality of EPC Gen 2 applications beyond simple compliance tagging and provide extended value for end-users. Included among the custom commands is support for extended memory, Electronic Article Surveillance for increased theft protection and Read Protect, which prevents

unauthorized reading of a tag and provides enhanced privacy protection. The IN510 is the first EPC Gen 2 certified reader to support NXP's custom commands.

The EM4222 chip-set from EM Microelectronic featuring the IPX protocol is also supported by the new firmware, and operational enhancements were added for Texas Instruments' EPC Gen 2 chip.

An overview of feature and performance enhancements is listed below. Please consult the product documentation for complete listing of all changes. Contact your distributor or reseller for information on obtaining the upgraded firmware along with extended warranty options. Information may also be obtained at www.sirit.com.

Upgrade Details

- **Version 2.0 is compatible with all production IN510 hardware revisions (A, B, C)**
 - Previous release was v1.4 in May 2007
- **The upgrade contains both feature enhancements and bug fixes**
- **Raises the performance bar which the Infinity 510 had previously set for UHF fixed readers**
- **Detailed syntax and semantics of new commands and configuration variables are available in the "Protocol Reference Guide"**
- **Detailed list of changes to command interface available in the Protocol Reference Guide Release Notes**
- **Regional compatibilities added:**
 - China
 - Israel
 - South Africa
 - Taiwan
 - Australia
- **NXP G2XM and G2XL Gen 2 Custom Commands**
 - Extended memory support (G2XL)
 - Read protect
 - Calibrate
 - EAS alarm
 - Special protocol for continuous polling for tags in the EAS Alarm state

- **Optimized ISO 18000-6C (Gen 2) T2 timing**
 - Interrogator response to tag reply
 - Improved robustness of communications across wide variety of tag silicon
- **ISO 18000-6C (Gen 2) Forward link tag communication**
 - Supports LF640 (640kbits) tag to reader communication
 - Fastest data rate allowable under EPC specifications and FCC regulatory regions (not available under ETSI conditions)
 - Doubles data rate and increases tag throughput
- **Gen 2 session configuration per antenna**
- **Support added for “Supertag” (iPx Read Only) protocol tag talk first (TTF) devices provided by EM Microelectronics – Marin SA such as the EM4122/4222**
 - Configurable backscatter link frequencies of 64kbps or 256kbps
- **Provides ability for reader to send syslog messages to remote server**
- **Improvement in tag singulation above v1.4**
- **v2.0 provides improvement in narrowband interfere tolerance above v1.4**
- **v2.0 provides improved receive path sensitivity above v1.4**
- **Reader Command History log**
 - Ability to view command requests and response (up to 50 characters) for any command which altered the reader state
 - Access to current and previous reader logs
- **Encrypted (TLS/SSL) communication added for:**
 - Command&Response channel (port 50002)
 - Event channel (port 50003)
- **Encrypted (PGP) communication added for:**
 - Discovery request channel
 - Discovery response channel
 - Reader responses will be PGP encrypted if the incoming message was PGP encrypted and successfully decoded
- **New command to test the condition of the LEDs**
 - Can be used to physically locate a specific reader
 - Multiple LEDs are allowed in one request