

Addendum to User Manual

Wireless STAR & eNode



September 2009

Mojix Incorporated
11075 Santa Monica Blvd., Suite 350
Los Angeles, CA 90025

Web: www.mojix.com
Tel: (877) 886-6549
E-mail: service@mojix.com



Table of Contents

LEGAL NOTICES	3
1. WIRELESS STAR SYSTEM COMPONENTS.....	4
1.1. MOJIX WIRELESS ENODES: DISTRIBUTED TRANSMITTERS.....	4
1.2. STAR INTERROGATION SPACES	4
1.3. MASTER CONTROLLER	4
1.4. WIRELESS STAR SYSTEM TOPOLOGY.....	5
2. INSTALLATION GUIDE LINES	6
2.1. WIRELESS STAR COMMAND LINK ANTENNA	6
2.2. WIRELESS ENODE INTERFACES.....	7
APPENDIX F: FCC NOTICE.....	8



Legal Notices

Copyright 2009 Mojix, Inc. All Rights Reserved.

All content contained within this document, including text, graphics, logos, icons, images, and other materials, is the exclusive property of Mojix or its content suppliers and is protected by U.S. and international copyright laws. The compilation (meaning the collection, arrangement, and assembly) of all content within this document is the exclusive property of Mojix and is also protected by U.S. and international copyright laws. The content within this document may be used as a resource. Any other use, including the reproduction, modification, distribution, transmission, republication, display, or performance, of the content on this website is strictly prohibited.

MOJIX, Mojix STAR, Mojix eNode, Mojix eGroup, and the Mojix logo are trademarks or registered trademarks of Mojix. All other trademarks mentioned in this document are the property of their respective owners. The trademarks and logos contained in this document may not be used without the prior written consent of Mojix or their respective owners.

Portions, features and/or functionality of Mojix's products are protected under Mojix patents, as well as patents pending.

This User Manual is provided as a reference for persons who are properly trained and qualified to install and/or operate Mojix's RFID products. Whereas Mojix makes every effort to ensure the accuracy and currency of its technical documentation, Mojix cannot be responsible for errors that occur in this User Manual or for changes to Mojix's products that might render information in this Manual obsolete. For information regarding Mojix technical training, visit Mojix's website (www.Mojix.com) or contact Mojix at service@mojix.com.

Improper handling or use of RF equipment can result in damage to property or injury to personnel.

FCC Compliance

This equipment has been tested and found to comply with the limits for Class B digital devices, pursuant to Part 15 of the FCC Rules. Any change or modification to this product voids the user's authority to operate per FCC Part 15 Subpart A. Section 15.21 regulations.



1. Wireless STAR System Components

The Mojix Wireless STAR system is a single network element at the enterprise edge. Based on Mojix's innovative distributed architecture, a single system consists of one or more STAR units managing up to 512 low-cost Mojix eNode transmitters. Mojix eNodes provide energy to all passive RFID tags within their specified interrogation spaces, while the centralized, high-sensitivity Mojix STAR reads the resulting tag signals from across the system's potentially vast coverage area of up to 250,000 sq. feet.

A Wireless STAR communicates configures and manages wireless eNodes through a command link. A command link antenna replaces the cabled interface between STAR and eNodes.

1.1. Mojix Wireless eNodes: Distributed Transmitters

Each Wireless eNode excites all passive RFID tags within its designated interrogation space and can be deployed as needed to shape discrete, overlapping or contiguous interrogation spaces, including configurations to create virtual fences for securing tagged items.

Mojix Wireless eNodes are designed to excite all EPC UHF Gen2 RFID tags within their designated interrogation spaces with an excite range of over 30 feet and a coverage area of more than 2,500 square feet, depending on tag sensitivity. While the wireless STAR can manage up to 512 wireless eNodes, it also shares in the management of a deployable sensor network in support of numerous concurrent business processes.

1.2. STAR Interrogation Spaces

Fixed or mobile interrogation spaces are business process specific and can be optimized for tag density or coverage. Each individually controlled interrogation space is created by the deployment of single or multiple wireless eNodes and is dynamically sized by the wireless STAR system, through individual exciter power output control.

1.3. Master Controller

The STAR-1000 signal processing platform is linked to an edge appliance called a Master Controller (MCON), and communicates via a standard Ethernet 10BaseT (RJ45) interface. The MCON can drive an arbitrary number of STAR-1000 systems and includes interfaces to the enterprise middleware. In a larger enterprise deployment, multiple STAR domains would exist in various locations and would require one or more controllers a clustered configuration.

1.4. Wireless STAR System Topology

Figure 1 illustrates Wireless STAR system topology, showing:

1. Wireless STAR 1000 and power supply, including the command link antenna
2. Wireless 4-port eNode, including the command link antenna
3. Sensor interface
4. eNode transmit antennas
5. MCON

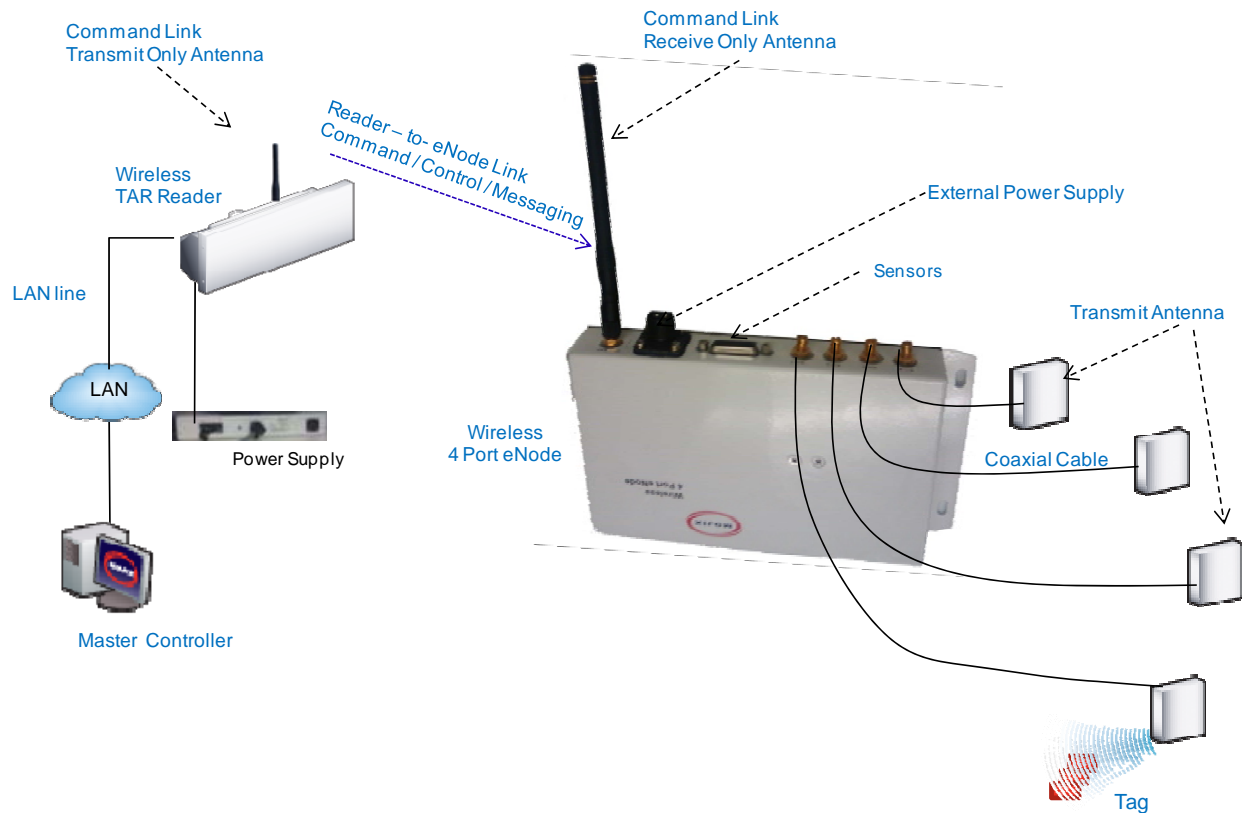


Figure 1: Wireless STAR System Topology

The following section details the Mojix Wireless STAR system installation and interfaces.



2. Installation Guide Lines

The detailed hardware specifications, including mechanical requirements, are identical to the cabled version of the STAR system and are detailed in the STAR-1000 user manual, as well as the configuration and operational guidelines.

What follows is an addendum to the user manual detailing the specifics applied to the installation and interfaces of the Wireless STAR and eNode.

2.1. Wireless STAR Command link antenna

Wireless STAR uses the command link antenna to communicate with wireless eNodes. The command link antenna specification is detailed in Table 1:

Command Link Antenna Specification		Comment
Center Freq.	916MHz	Model # ANT-916-CW-HWR
Bandwidth	30MHz	
Wavelength	1/2-wave	
VSWR	<2.0 typ. at center	
Impedance	50 ohms	
Gain	2dBi Maximum	
Connector	SMA	

Table 1: STAR Command Link Antenna Specifications

2.2. Wireless eNode interfaces

Wireless eNode interfaces are depicted in Figure 2, and summarized in Table 2.

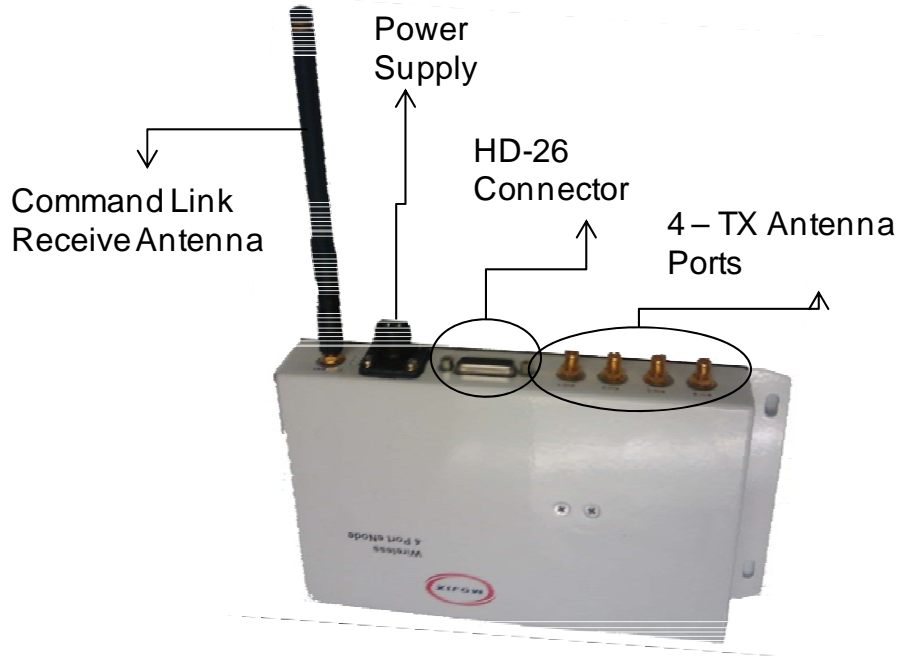


Figure 2: Wireless 4-port eNode Interfaces

4-port eNode Specification	Comment
Command Link Antenna	SMA connector - Receive only
Power Supply	External 24V 1A, power supply
Antenna – 1 output connector	R-SMA connector
Antenna – 2 output connector	R-SMA connector
Antenna – 3 output connector	R-SMA connector
Antenna – 4 output connector	R-SMA connector
External I/O connector	HD-26

Table 2: Wireless 4-Port eNode Interfaces



Appendix F: FCC Notice

INSTRUCTION TO THE USER

The user is cautioned that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

INSTRUCTION TO THE USER

This equipment has been tested and found to comply with the limits for a class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This equipment has been certified to comply with the limits for a class B computing device, pursuant to FCC Rules. In order to maintain compliance with FCC regulations, shielded cables must be used with this equipment. Operation with non-approved equipment or unshielded cables is likely to result in interference to radio and TV reception. The user is cautioned that changes and modifications made to the equipment without the approval of manufacturer could void the user's authority to operate this equipment.

CAUTION: To comply with FCC RF exposure compliance requirements, a separation distance of 20 cm must be maintained between the antenna of this device and all persons.



Addendum to User Manual

Wireless STAR & eNode



Mojix Incorporated

11075 Santa Monica Blvd., Suite 350
Los Angeles, CA 90025

Web: www.mojix.com
Tel: (877) 886-6549
E-mail: service@mojix.com

Need More Help? Our product support team is comprised of individuals highly experienced in RFID deployments across a broad spectrum of application and use cases. If you are an existing customer of Mojix, please login to the secure area and submit a service request if you have additional questions. If you are unable to login, then please send us an email at: service@mojix.com