



**Airgoon LTD.**

2207 Concord Pike Unit 700  
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November 17<sup>th</sup> 2011

## **Model: Airgoon Air-Lock WK 9900 Wireless Network Stabilizer Module**

### **Introduction Manual.**

The Airgoon Air-Lock WK 9900 Wireless Network Stabilizer Module is the world's only Intelligent Network Stabilizer Module for simple plug and play operation. It is the only module on the market today that will exceed the specifications of today and beyond current 4G protocols. The Airgoon Air-Lock WK 9900 Wireless Network Stabilizer Module has been engineered to keep pace with the Network Operator's future developments in technologies thereby removing the fear of obsolescence. Built in a compact package size just measuring (LxWxH) 50.8 mm. x 50.8 mm. x 12.7 mm., it provides for a simple integration or along side other devices. The Airgoon Air-Lock WK 9900 Wireless Network Stabilizer has been designed and manufactured for enhancing, extending or maintaining a constant signal for better performance without impacting the Carrier's Networks. The Air Lock WK 9900 is available for use on all 850/1900 MHz networks with the following: 700 MHz, 1700 MHz, 2100 MHz and 2.5 GHz. Frequency Bands being released in the Q1 2012.

### **FCC/IC Regulatory Information Important notice**

We, Airgoon LTD 2207 Concord Pike, Suite 700, Wilmington, Delaware 19803 declare that the Airgoon Air-Lock WK 9900 Wireless Network Stabilizer Module complies with Parts 22H and 24E of the FCC CFR47 Rules. Operation is subject to the following two conditions: This device may not cause harmful interference, and this device must accept any interference received, including interference that may cause undesired operation.

Because of the nature of wireless communications, transmission and reception of data can never be guaranteed. Data may be delayed, corrupted (i.e., have errors) or be totally lost. Although significant delays or losses of data are rare but they do occur when wireless devices such as the Airgoon Air-Lock WK 9900 Wireless Network Stabilizer Module are used. The Airgoon Air-Lock WK 9900 Wireless Network Stabilizer Module should not be used in situations where failure to transmit or receive data could result in damage of any kind to the user or any other party, including but not limited to personal injury, death, or loss of property. Airgoon and its affiliates accepts no responsibility for damages of any kind resulting from delays or errors in data transmitted or received using The Airgoon Air-Lock WK 9900 Wireless Network Stabilizer Module Network Stabilizer, or for failure of the Airgoon Air-Lock WK 9900 Wireless Network Stabilizer Module to transmit or receive such data.

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The Airgoon Air-Lock WK 9900 Wireless Network Stabilizer Module has been granted approval for mobile and fixed applications. If using the Airgoon Air-Lock WK 9900 Wireless Network Stabilizer Module within other products additional FCC/IC (Industry Canada) certification may or may not be needed if they meet the following conditions; In a mobile environment at least 25.4 cm separation distance between the outdoor antenna and the user's body and at least 20.32 cm separation between the antenna and the user's body must be maintained at all times. In a building structure environment at least 50.8cm separation distance between the outdoor antenna and the user's body and at least 38.1 cm separation distance between the outdoor antenna and the user's body must be maintained at all times. When using the Airgoon Air-Lock WK 9900 Wireless Network Stabilizer Module, use of any antenna gain higher than 15.12 dBi using is in violation of FCC regulations, for which the offender is fully liable.

Failure of the end-user to comply with the applicable requirements may result in the unlawful operation and adverse action against the end-user by the applicable National Regulatory Authority. This product does not contain any user serviceable components and is to be used with approved antennas only. Any product changes or modifications will invalidate all Applicable Regulatory Certifications and Approvals.

If using the Airgoon Air-Lock WK 9900 Wireless Network Stabilizer Module within another device a label must be affixed to the outside of the end product into which is incorporated, with a statement similar to the following: This device contains FCC ID: ----- and IC ID: ----- The Airgoon Air-Lock WK 9900 Wireless Network Stabilizer Module ID: IC----- where ID: IC----- is the Airgoon Network Stabilizer's certification number.

A user manual with the end product must clearly indicate the operating requirements and conditions that must be observed to ensure compliance with current FCC / IC RF Exposure Guidelines. The end product with an the Airgoon Air-Lock WK 9900 Wireless Network Stabilizer Module may also need to pass the FCC Parts 22H and 24E Unintentional Emission Testing Requirements and be properly authorized by the FCC.

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### **Installation Instructions**

Placement of the Antennae is very important, as the Antennae location may affect the RF performance. The Airgoon Air-Lock WK 9900 Wireless Network Stabilizer Module is shielded to prevent network interference, however careful consideration must be made when deciding where to place the antennae.

**Note: AIRGOON CANNOT GUARENTEE OTHER MANUFACTUERS PRODUCTS, THE USE OF ANY OTHER ANTENNAE OTHER THAN AIRGOON'S APPROVED ANTENNAE IS STRICTLY PROHIBITED AND WILL VOID ALL WARRANTIES.**

If the Antenna is insufficiently shielded then high levels of spurious noise can be introduced to the device thus resulting in degraded performance of the Airgoon Air-Lock WK 9900 Wireless Network Stabilizer Module. If the impedance of the cable used is not 50 ohms then it is mismatched and the RF performance is greatly reduced. Antenna cables should be routed, if possible, away from noise sources from all power supplies. The Airgoon Air-Lock WK 9900 Wireless Network Stabilizer Module is designed to prevent outside interference which can affect the RF performance. To mitigate the issue the End-User must use caution around common sources such as power supply noise and device-generated RF.

### **Powering Up the Device**

The Airgoon Air-Lock WK 9900 Wireless Network Stabilizer Module is designed to use a 12VDC or a 5VDC (Version) Nominal Power Supply. It is the End-User's responsibility to provide safe and continuous power to the Airgoon Air-Lock WK 9900 Wireless Network Stabilizer Module at all times during use; the Airgoon Air-Lock WK 9900 Wireless Network Stabilizer Module does have protection circuits to guard against electrical issues.

**Note: When attaching the Antennae to the Airgoon Air-Lock WK 9900 Wireless Network Stabilizer Module the Power to the Device must be Powered Off. It is never a good a practice to swap Antennae (Hot Swapping) to any RF Device of any kind when the Power is On, this can result in Permanent Damage to the RF Device.**

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The use of the supplied Mini USB Power Supply Connector is required. The use of 50 ohms coaxial cables from The Airgoon Air-Lock WK 9900 Wireless Network Stabilizer Module to the antenna with a maximum dB loss of 10 dB is strongly recommended. NOTE: When attaching coaxial cables to the Airgoon Air-Lock WK 9900 Wireless Network Stabilizer Module always try to minimize the RF cable losses as much as possible for Optimum Device Performance.

### **Important Notice**

Wireless communications, transmission and reception of data and voice can never be guaranteed. Data and voice may be delayed, corrupted or you may experience complete loss of information. Although it is rare to have delays or to lose data when using the Airgoon Air-Lock WK 9900 Wireless Network Stabilizer Module, the device should not be used in situations where failure to transmit or receive data could result in damage of any kind to the user or any other party, including but not limited to personal injury, death, or loss of property. Airgoon accepts no responsibility for damages of any kind resulting from delays or errors in data transmitted or received when using the Airgoon Air-Lock WK 9900 Network Stabilizer.

Do not operate Airgoon Network The Airgoon Air-Lock WK 9900 Wireless Network Stabilizer Module in areas near medical equipment, near life support equipment, or any equipment that may be prohibited or susceptible to any form of radio interference. In such areas, the Airgoon Air-Lock WK 9900 Wireless Network Stabilizer Module must be Powered Off.

The information in this manual is subject to change without notice and does not represent a commitment on the part of Airgoon and or its affiliates. Specifically disclaim liability for any and all direct, indirect, special, general, incidental, consequential, punitive or exemplary damages including, but not limited to, loss of profits, revenue, anticipated/projected profits or revenue arising out of the use or inability to use any Airgoon product. Any buyer of the Airgoon Air-Lock WK 9900 Wireless Network Stabilizer Module are advised of the possibility of such damages or they are foreseeable or for claims by any third party.

Notwithstanding the foregoing, in no event shall Airgoon have liability arising under or in connection with the use of the Airgoon Air-Lock WK 9900 Wireless Network Stabilizer Module product, regardless of the number of events, occurrences, or claims giving rise to liability, be in excess of the price paid by the purchaser for the purchased product.

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### **Demonstration Evaluation Kit**

Airgoon manufactures a Demonstration Evaluation Kit (DEK) that facilitates the integration with. This kit is a hardware development platform that is designed to support the OEM/ODM. This kit contains all the hardware components and software that are necessary for evaluating and developing a strategy for the Airgoon Network Stabilizer, including:

**Cables \* Antennas \* Accessories \* Technical Support**

**Subject: Airgoon Air-Lock WK 9900 Specifications (w/o Antennae).**

#### **Dual-Band 850/1900 MHz. Specifications.**

|   |  |                |  |  |  |
|---|--|----------------|--|--|--|
| Model Number:   | Air-Lock WK 9900.  |                |  |  |  |
| Antenna Connectors:   | MMCX Female.   |                |  |  |  |
| Antenna Impedance:  | 50 Ohms.   |                |  |  |  |
| Dimensions (LxWxH):   | 50.8mm x 50.8mm x 10.2mm                                   |                |  |  |  |
| Weight:   | 1.0 oz.  |                |  |  |  |
| Frequency Bands:  | 824-894 MHz.   | 1850-1990 MHz. |  |  |  |
| Pass-Band Gain:   | 65 dB. Max.  | 65 dB. Max.    |  |  |  |
| RF Output Power (40 dB. ACP):<br>(ACP – Adjacent Channel Power) | 28 dBm. Max.   | 28 dBm. Max.   |  |  |  |
| Noise Figure:   | 2.5 dB. Max.   | 2.5 dB. Max.   |  |  |  |
| Isolation:  | 100 dB. Min.   | 100 dB. Min.   |  |  |  |
| Adjacent Band Rejection:  | 100 dB. Min.   | 100 dB. Min.   |  |  |  |
| Dynamic Range / Linearity:                                      | 120 dB. Min.   | 100 dB. Min.   |  |  |  |
| Receive Sensitivity:  | 120 dB. Min.   | 120 dB. Min.   |  |  |  |
| 10dB. RF Selectivity Bandwidth:                                 | 35.0 MHz.  | 70.0 MHz.      |  |  |  |
| 20dB. RF Selectivity Bandwidth:                                 | 38.0 MHz.  | 75.0 MHz.      |  |  |  |
| 40dB. RF Selectivity Bandwidth:                                 | 40.0 MHz.  | 85.0 MHz.      |  |  |  |
| AC Power Requirements:  | 110-240 VAC, 50-60 Hz. 0.15A.                              |                |  |  |  |
| DC Power Requirements:  | +12 VDC, 0.20A. to 1.00 A.<br>(Subject to RF Output Power) |                |  |  |  |

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