



G-BOX User Manual Rev. 1.0a

Model: GBOX-P18SK

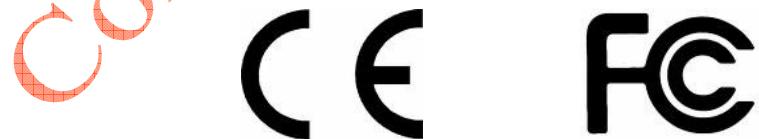


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FCC statement

FCC NOTICE:

To comply with FCC part 15 rules in the United States, the system must be professionally installed to ensure compliance with the Part 15 certification. It is the responsibility of the operator and professional installer to ensure that only certified systems are deployed in the United States.

The use of the system in any other combination (such as co-located antennas transmitting the same information) is expressly forbidden.

CE statement

CE NOTICE:

The CE Mark applies to products regulated by certain European health, safety and environmental protection legislation. The CE Mark is obligatory for products it applies to: the manufacturer affixes the marking in order to be allowed to sell his product in the European market.

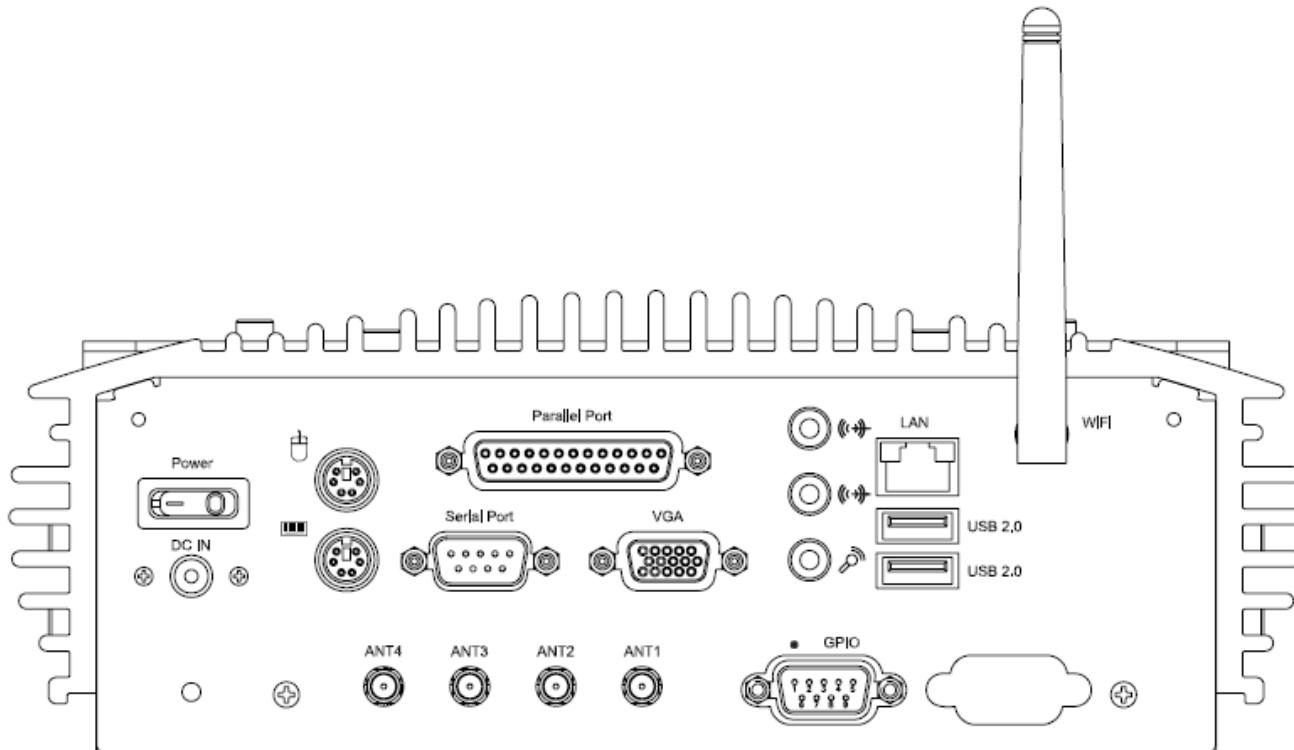
Chapter 1 Introduction of G-BOX

1.1 Overview of G-BOX

The Schmidt & Co., (Hong Kong) Ltd., SCHMIDT RFID (“SCHMIDT RFID”), reader does more than simply read and acts as a data conduit, they need processing speed and ample memory. The SCHMIDT RFID G-BOX (Model: GBOX-P18SK) is an intelligent reader, all-in-one box, which includes powerful RFID reader, CPU, embedded middleware as well as application software. The Fanless design with 4 antenna ports meets most of the industrial requirements. G-Box reduces implementation cost and deployment time; improves reliability in harsh environments and enhances overall RFID system performance.

- The G-BOX Intelligent RFID Reader supports protocols such as UHF CLASS 1 GEN2 (ISO 18000-6C) and ISO 18000-6B (865-868 MHz RFID frequency band) in Europe as well as (902-928 MHz RFID frequency band) in United States.

1.2 Ports Description



The G-BOX has several types of input/output port:

Items	Name	Description
1	DC power port	Connect the DC power source to G-BOX
2	PS/2	Connect a keyboard and a mouse to the G-BOX
3	VGA output port	Connect to a VGA monitor
4	Audio input/output port	Connect to a microphone and a speaker
5	Serial port (Com 1)	Connect to an external device with RS232 serial communication compatibility
6	Parallel port	Connect the a parallel port control device, generally to handle printer
7	USB	Connect to USB device. It allows plug-and-play devices to be connected and disconnected without rebooting the computer
8	Ethernet port	10BaseTx/100BaseTx port that connects the reader to your Ethernet network.

9	GPIO	General Purpose Input/Output port that connects the G-BOX to different industrial controls.
10	Antenna port for WiFi	Connect a vertical rod antenna to transmit and receive the WiFi signal
11	Antenna port for RFID reader	Connect to UHF RFID antenna

1.3 Indicators LEDs in G-BOX



The G-BOX has different LEDs to indicate the reader status.

Name	Label	Description
Power	PWR	Turn ON when G-BOX is POWER ON
Read and write	R/W	Flashes when G-BOX is busy
Ready to work	READY	Turn on when G-BOX is ready to perform schedule task
LAN Status	LAN	Flashes when G-BOX connects the network
WiFi	WiFi	Flashes when WiFi function is activated
Multiplexer	MUX	Remains on when G-BOX multiplexer is in used
Tag Identification	TAG	Turn On when any tag is detected by G-BOX

1.4 Antenna For G-BOX

There is no antenna shipped with G-BOX. The following antenna models are recommended for G-BOX:

CS-771



Patch-A0025





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1.5 Product Features

- Intel Pentium M or Celeron M processor
- Communications Interface options: Ethernet and WiFi
- General Purpose Input/Output (GPIO)
- Four UHF Antenna ports
- Built-in SchmidtRFID Middleware
- High durability in harsh environments
- Easy installation and maintenance
- All-in-one compact design
- Fanless Design for protection of dirt, dust, insects, liquids
- Supporting tag interface of ISO18000-6B and ISO18000-6C (UHF C1G2)

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Specification:

Physical Characteristics	Length: 24.5 cm Width: 24 cm Height: 8.7 cm Weight: 4.75 kg / 10.45 lbs
Environment	Operating Temperature: 0°C to 45°C Storage Temperature: -20°C to 75°C
Mounting	Optional :Desktop Mount, Wall Mount, Rack Mount
RF Antenna Connections	Four RF ports: Standard SMA
RFID Frequency Ranges	860 to 930 MHz
Tag Air Interfaces	ISO 18000-6B ISO 18000-6C (UHF C1G2)
Power	External power supply:100-240 VAC Auto ranging, 50-60 Hz
General Purpose Inputs/Outputs (GPIO)	8 Programmable Digital I/Os
Processor	Intel Pentium M or Celeron M CPU
Memory	DDR RAM Up to 1 GB Optional: Compact Flash up to 8 GB Optional: 40GB hard drive
Connectivity	Ethernet 10/100 full and half duplex Optional 802.11 b/g WiFi (WPA2 support) USB 2.0, RS232 and Parallel Port for peripheral devices
Indicators LEDs	Power; Read/Write; Ready-to-work; LAN Status; WiFi; Multiplexer; Tag Detection
Network services	Supports HTTP/HTTPS Web server, SSH server, FTP Server, Telnet server, DNS Client, etc
Device Configuration	RFID configuration Tag types, Tag operation, Tag reporting, Antenna configuration, General Purpose Input/Output (GPIO)
Middleware upgrades	Through internet and web interface upgrade
Security	Username & password protection Enable/Disable network services

	Enable/Disable serial configuration
Development Environments	Support applications written in C++, C#.NET or Java, etc.; Web test interfaces, GPIO Control
Accessories	WiFi antenna, power adaptor, power cord, mounting bracket.
Restrictions on Use	Some approvals and features may vary depending on country legislation and may change without notice.

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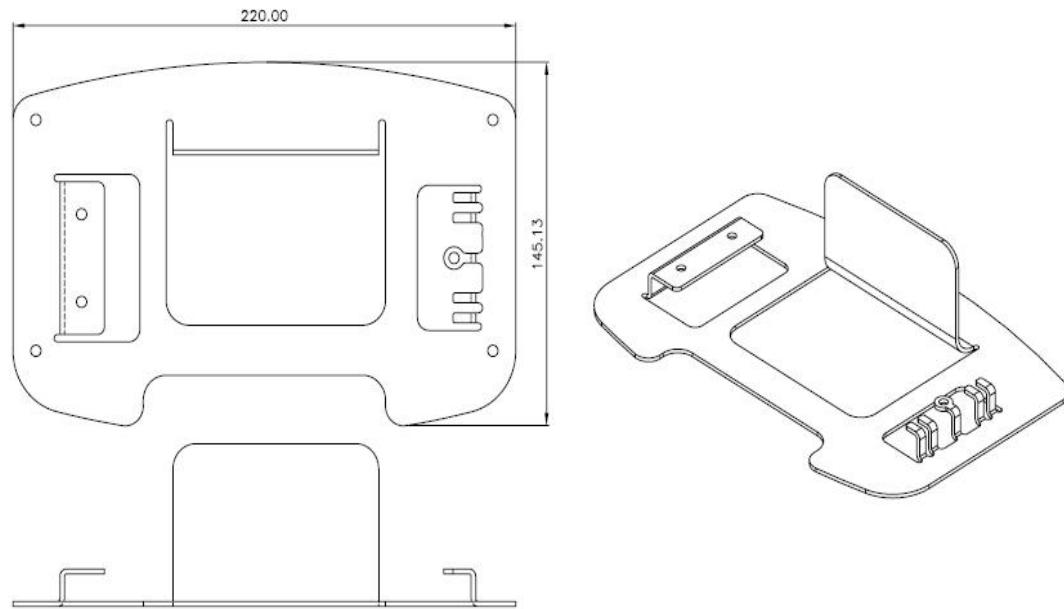
Chapter 2 Installation of G-BOX

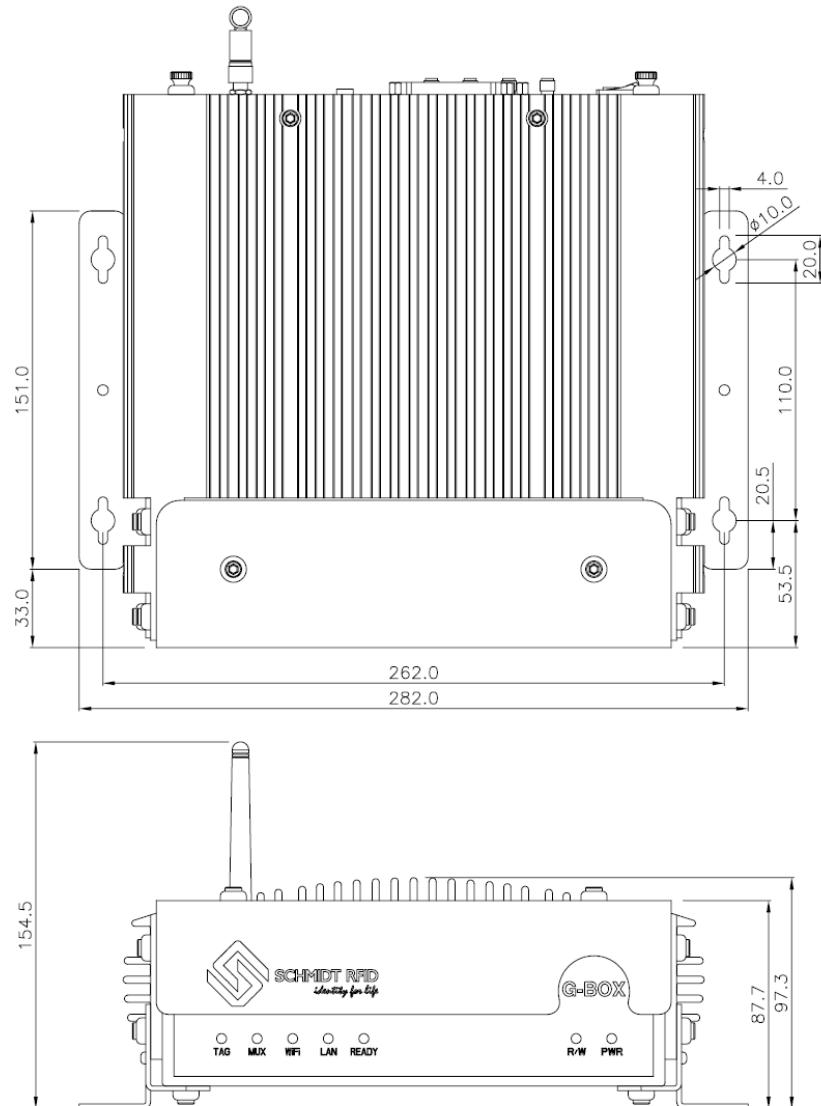
This section explains how to choose a mounting location for the G-BOX and connect the G-BOX to your network.

2.1 Choosing a Mounting Location

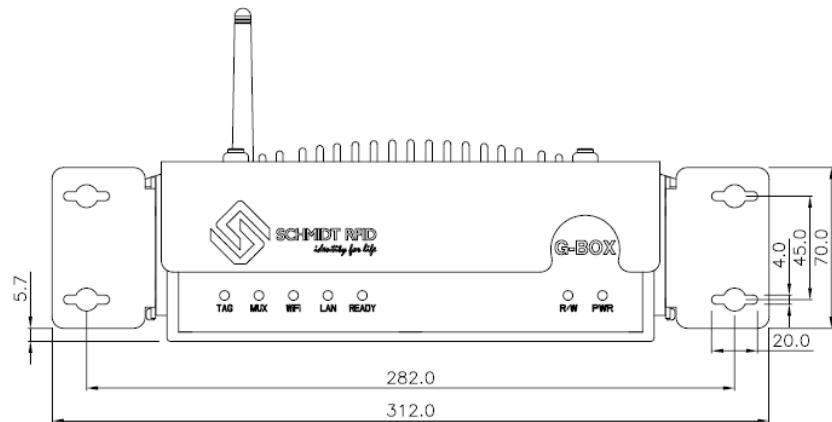
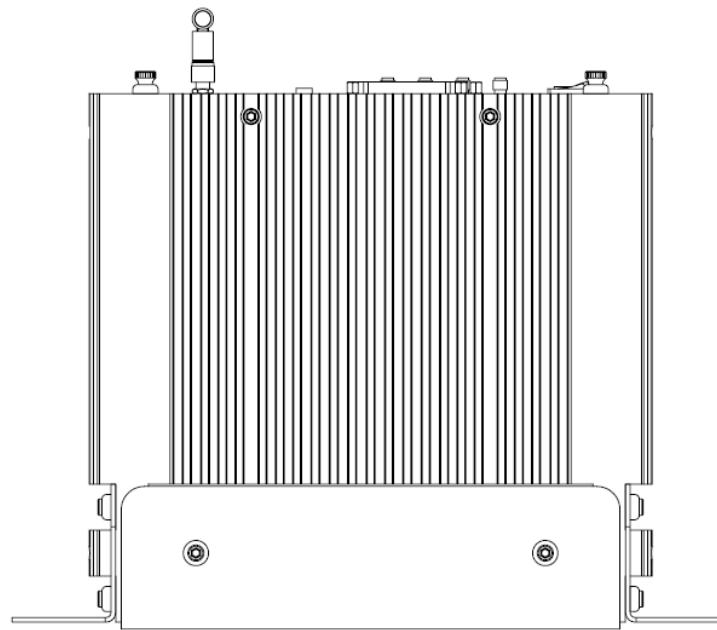
Users can mount the G-BOX to a wall or a rack using the mounting bracket kit. It is strongly recommend users to install G-BOX with a mounting. There are three types of them. Desktop mount is the most common mounting in office. Wall mount is suitable for vertical mounting. Rack mount usually is used for server/rack installation. For more information, please contact your local Sales representative.

Desktop mount model



Wall mount model


Copy

Server/Rack Mount model


2.2 G-BOX Environmental Requirements

The next table includes environmental requirements for the G-BOX. Choose a location that meets these requirements.

Description	Minimum	Maximum
Operating temperature	-20°C (-4°F)	45°C (122°F)
Storage temperature	-20°C (-4°F)	70°C (158°F)
Humidity (non-condensing)	10%	90%

2.3 Start Up Procedures

1. Before installation of G-BOX, please follow the steps below:
2. Install and fasten the G-BOX mounting in right location.
3. Before turn ON the G-BOX, please connect UHF antenna.

**Caution: Each port must have either an antenna or a terminator connected.
Do not apply power to the G-BOX unless an antenna or terminator is installed on each antenna port.**

4. Connect an Ethernet cable to the G-BOX's Ethernet port.
5. Connect the DC power adaptor to the power socket on the G-BOX.
6. Connect the AC power cord to an AC outlet. When you apply power, the G-BOX boots and the Blue Power LED turns on.

*Default IP / subnet mask: 192.168.127.100 / 255.255.255.0

2.4 Caution

Danger of Electric Shock

- Disconnect the device from the electric supply before cleaning or performing maintenance on the machine.
- Keep this device dry.
- For in-door use only. Not designed for out-door purpose.
- Turn off or unplug the machine when it is not in use.

Please read the information contained within this user manual prior to attempting installation and operation of the RFID Reader. Failure to install and operate the RFID Terminal (G-BOX) in accordance with the information contained in this manual may result in unsatisfactory performance.

2.5 Professional Installation Instructions

Safety and Regulatory Compliance Information

This document contains important safety and regulatory compliance information for the following products:

Please read this document before installing and using your product and see the following sections for more information:

- Safety Information
- Federal Communications Commission (FCC) Compliance
- Modifications
- Warnings
- Information for Professional Installers
- Regulatory Compliance Certifications Summary

Safety Information

All products are intended to be installed, used, and maintained by experienced telecommunications personnel only.

When using this device, basic safety precautions should always be followed to reduce the risk of fire, electrical shock, and injury to persons, including the following:

- Operate and install these products as described in this manual. Equipment must be installed and used in strict accordance with the manufacturer's instructions as described in the user documentation provided.
- Installation of these products in the end use must conform to local regulations and codes.
- Products are to be used with and powered by only the power injector provided.
- A 13-amp circuit breaker is required at the power source.
- Do not connect or disconnect the power cable to the equipment when the power injector is plugged into an AC power outlet.
- Servicing of these products should be performed only by trained personnel. Do not disassemble. By opening or removing any covers, you may expose yourself to hazardous energy parts. Incorrect reassembly of these products can cause a malfunction and/or electric shock when the units are subsequently used. No user serviceable parts; all repairs and service must be handled by a qualified service center.
- Do not insert any objects of any shape or size inside these products while powered on. Object may contact hazardous energy parts that could result in a risk of fire or personal injury.
- Do not remove or alter the Marking label provided on these products.
- To avoid the risk of electric shock from lightning, do not use these products during an electrical storm.
- When using these products with an external antenna, see the installation documentation provided with the antenna system.

Federal Communications Commission (FCC) Compliance

These products operate at the following frequencies in compliance with Part 15 of the FCC rules:

- RFID; 902 MHz - 928 MHz,
- WiFi; 2.4 - 2.4835 GHz.

Operation is subject to the following two conditions: 1) this device may not cause harmful interference, and 2) this device must accept any interference received, including interference that may cause undesired operation.

To comply with the FCC radio frequency exposure requirements, the following antenna installation and device operating configurations must be satisfied:

- Product models using external antennas require professional installation. The antennas used for professional installation must be fixed-mounted on indoor/outdoor permanent structures with a separation distance from all persons of at least 20 cm (approximately 8 inches).
- Antennas must not be co-located and must not operate in conjunction with any other antenna or transmitter.

Warnings

Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. The equipment has been tested and found to comply with 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 and 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 or on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio / technician for help.

To ensure safety of users, the FCC has established criteria for the amount of radio frequency energy that can be safely absorbed by a user or bystander according to the intended usage of the product. This product has been tested and found to comply with the FCC criteria. The G-BOX shall be installed & used such that parts of the user's body other than the hands should be maintained at a comfortable distance of approximately 20 cm or

In some situations or environments, the use of wireless devices may be restricted by the proprietor of the building or responsible representatives of the organization. These situations may, for example, include the use of wireless equipment on board airplanes, or in any other environment where the risk of interference to other devices or services is perceived or identified as harmful.

If you are uncertain of the policy that applies on the use of wireless equipment in a specific organization or environment (such as airports), you are encouraged to ask for authorization to use this device prior to turning on the equipment.

Modifications

The FCC requires the user to be notified that any changes or modifications to this device that are not expressly approved by the manufacturer may void the user's authority to operate the equipment. The correction of interference caused by unauthorized modification, substitution or attachment will be the responsibility of the user. The manufacturer and its authorized resellers or distributors are not liable for any damage or violation of government regulations that may arise from failing to comply with these guidelines.

Information for Professional Installers

All products must be professionally installed, and the transmit power of the system must be adjusted by the professional installers to ensure that the system EIRP is in compliance with the limit specified by the regulatory authority of the country of application.

See the following sections for more information:

Professional installers should select only the antenna types listed in the following table

<u>Frequency Band</u>	<u>Antenna Type</u>
RFID; 900 MHz	CS-771, Patch-A0025, Sense G900D-8,
WiFi; 2.4 GHz	WiFi Antenna,

Chapter 3 Demonstration of RFID Applications

3.1 Creating RFID Application for the G- BOX

Since SchmidtRFID G-BOX intelligent reader with the powerful combination of an Intel Pentium M processor and up to 1GB of optional memory, Users can develop own application on this platform.

3.1.1 Delivering Application to G-BOX

When the user wants to deliver applications to the G-BOX, they just simply install the program in WINXP platform

3.1.2 Programming Language compatibility

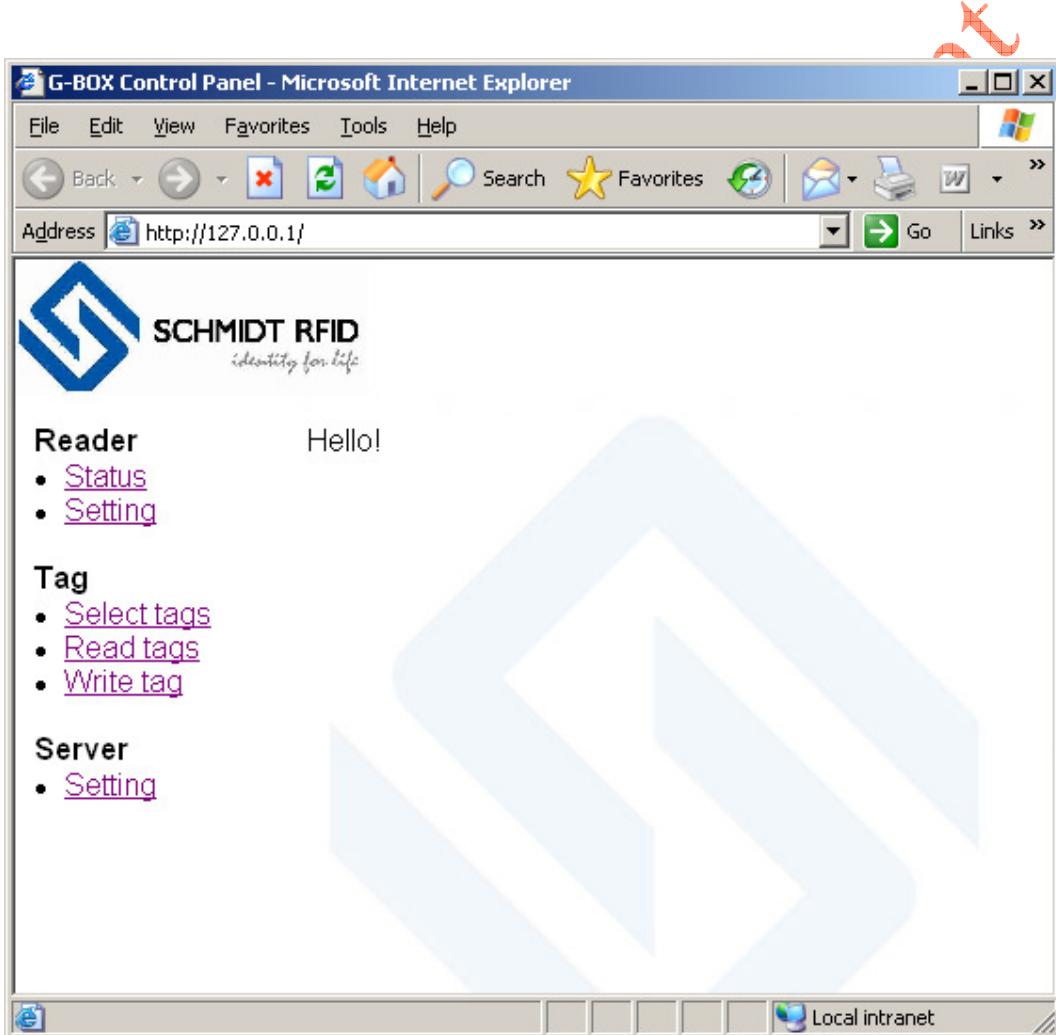
Users may use several types of programming language, for examples, C++, C#.NET, Java and Java script.

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Chapter 4 Demonstration of RFID reader

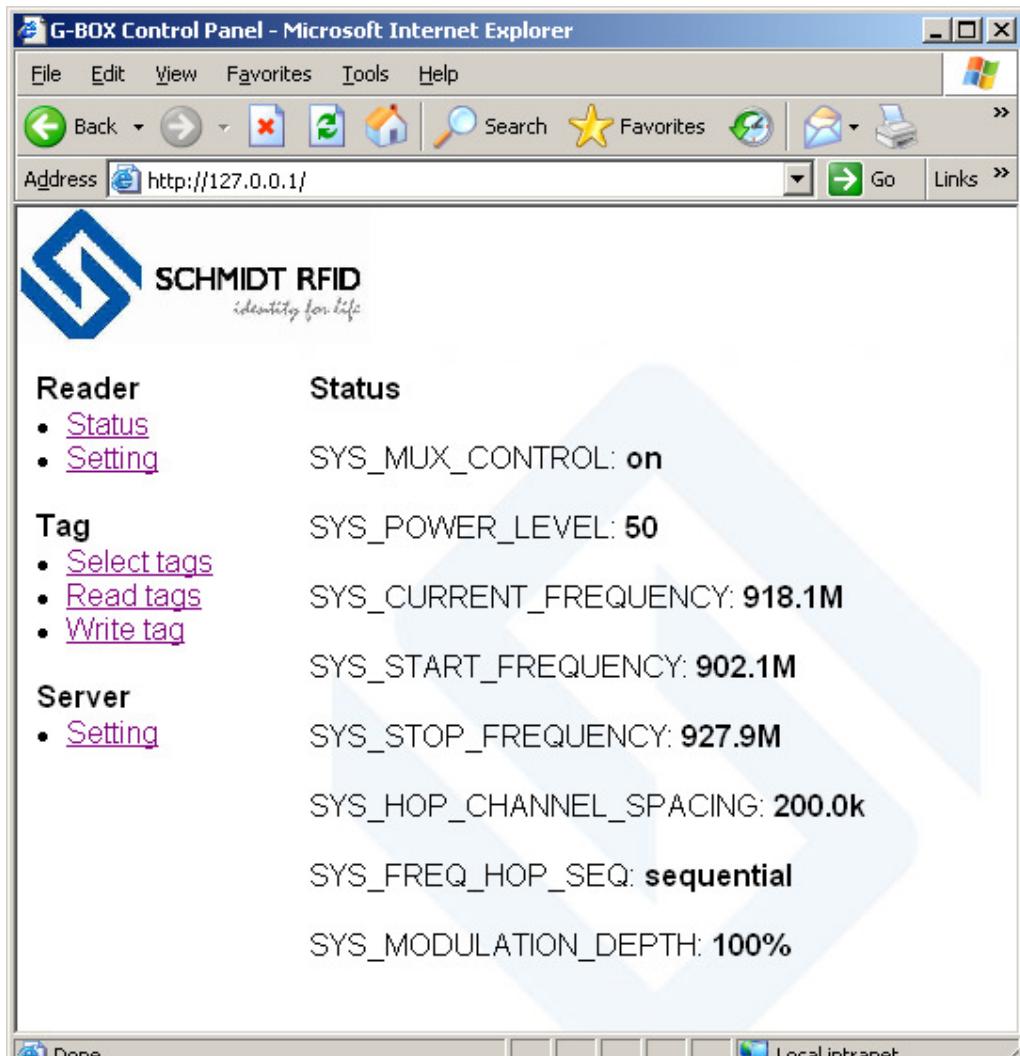
4.1 Installation procedure of Middleware

This section explains how to test the RFID reader. Open “Microsoft Internet Explorer”, Key in <http://127.0.0.1/index.html> into the address bar. A simple page is shown as following figure. If this page cannot reach, IIS service may not be started.



4.2 Check RFID reader status

Click "Status" to check the RFID reader status, When the RFID reader works normally, it shows the multiplexer status, the current antenna power level, the current carrier frequency and so on.

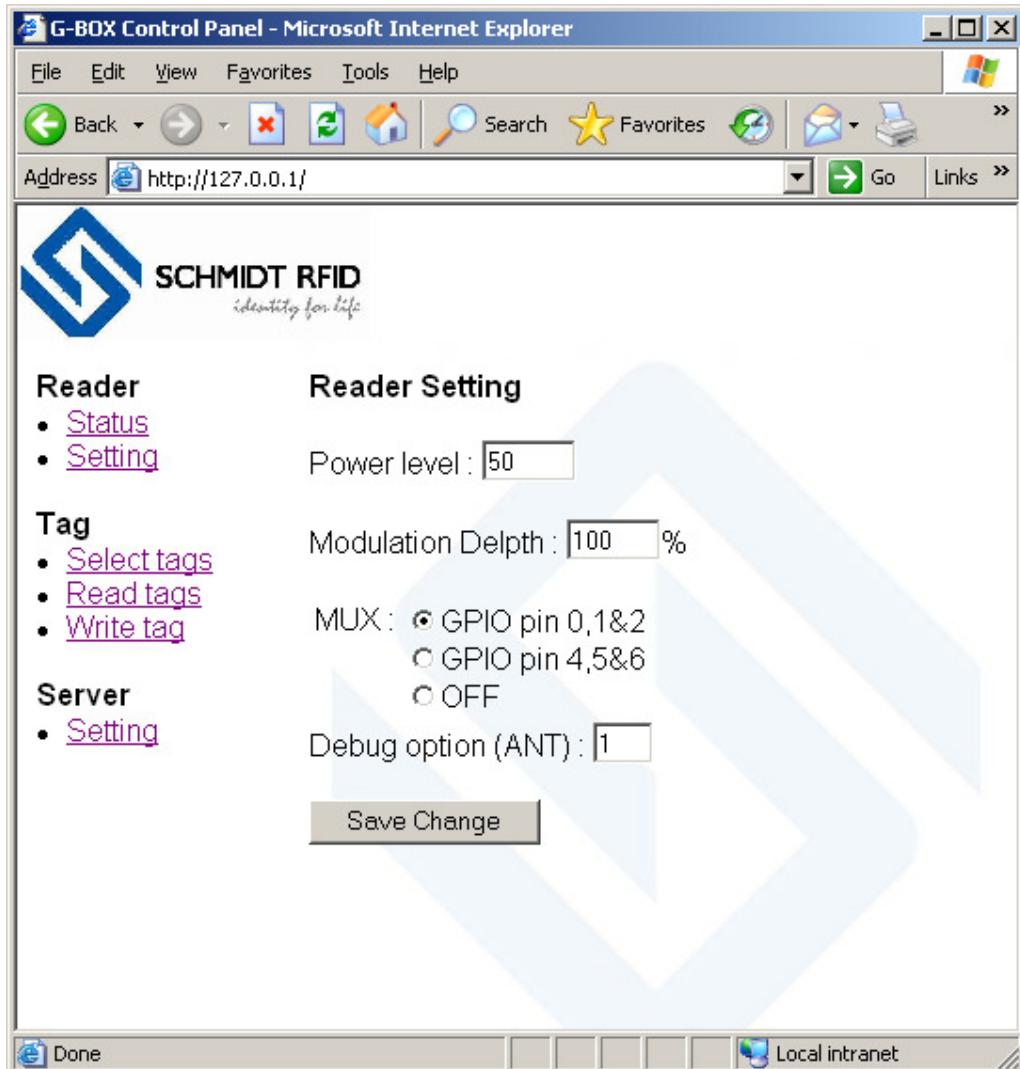


The screenshot shows the G-BOX Control Panel interface in Microsoft Internet Explorer. The address bar shows <http://127.0.0.1/>. The main content area displays the following status information:

Reader	Status
• Status	SYS_MUX_CONTROL: on
• Setting	
Tag	SYS_POWER_LEVEL: 50
• Select tags	SYS_CURRENT_FREQUENCY: 918.1M
• Read tags	SYS_START_FREQUENCY: 902.1M
• Write tag	SYS_STOP_FREQUENCY: 927.9M
Server	SYS_HOP_CHANNEL_SPACING: 200.0k
• Setting	SYS_FREQ_HOP_SEQ: sequential
	SYS_MODULATION_DEPTH: 100%

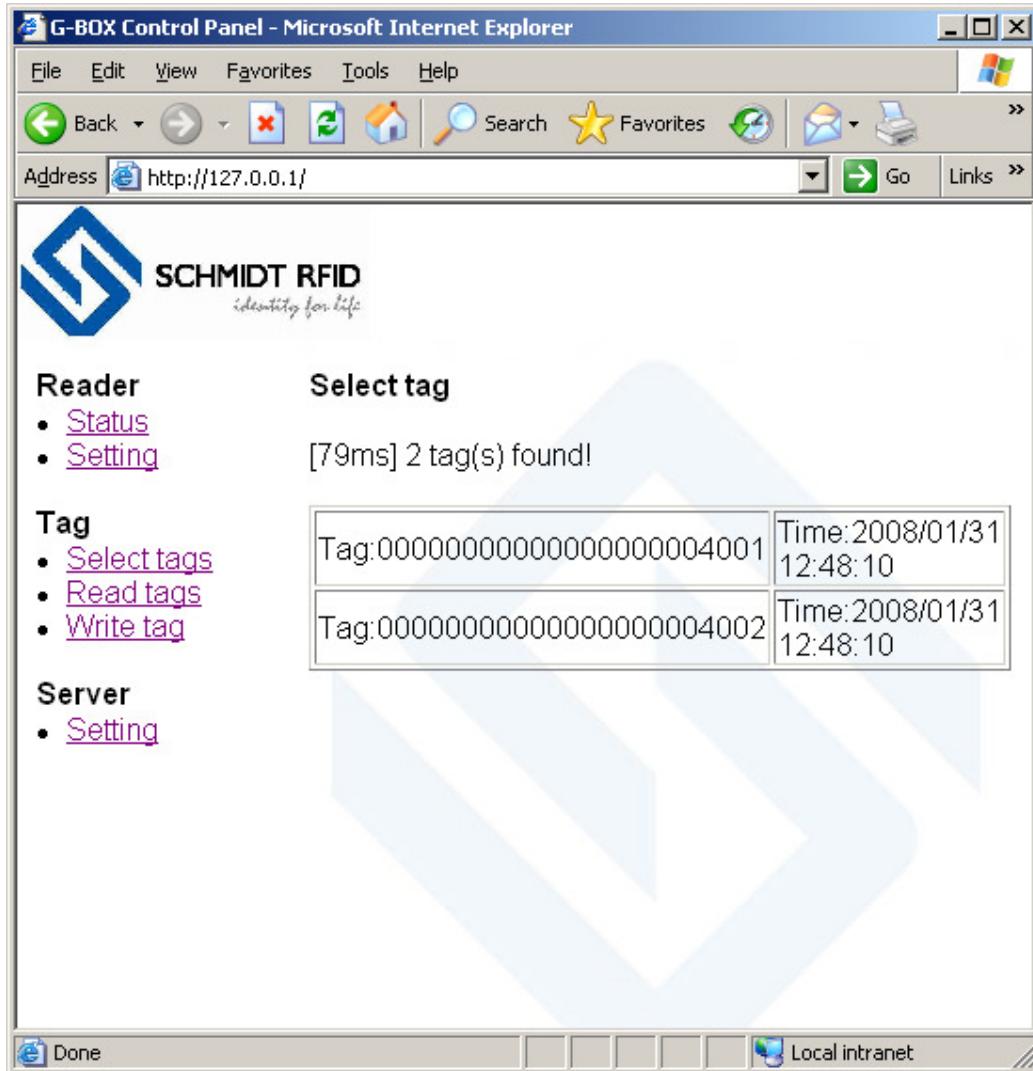
4.3 Perform the simple setting on RFID reader

Click "Setting", users can customize the output power level, the modulation depth and multiplexer control. Key in all setting and then press "Save Change"



4.4 Loop mode

Click "Select tags", RFID reader runs in loop mode. Middleware will read tag every second. The total read time, the number of tag read, tags ID and receiving time are reported.



The screenshot shows the G-BOX Control Panel interface in Microsoft Internet Explorer. The title bar reads "G-BOX Control Panel - Microsoft Internet Explorer". The address bar shows "http://127.0.0.1/". The main content area displays the following information:

Reader

- [Status](#)
- [Setting](#)

Select tag

[79ms] 2 tag(s) found!

Tag:000000000000000000004001	Time:2008/01/31 12:48:10
Tag:000000000000000000004002	Time:2008/01/31 12:48:10

Tag

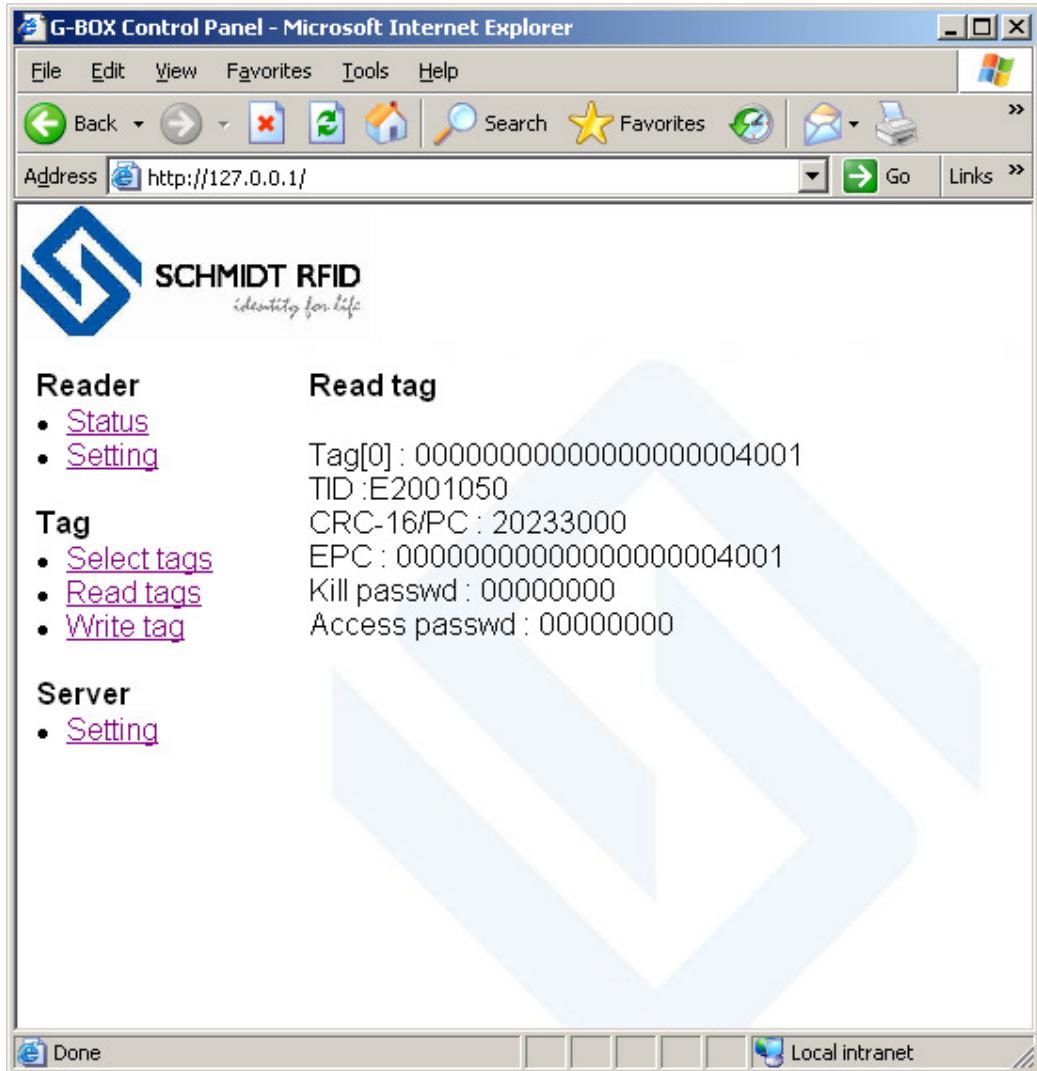
- [Select tags](#)
- [Read tags](#)
- [Write tag](#)

Server

- [Setting](#)

4.5 Inventory mode

Click "Read tags" to enter inventory mode, RFID reader try to read tag around antenna and shows all information in tag such as the Tag Identification, CRC-16/PC, EPC, Kill password and Access password.



The screenshot shows the G-BOX Control Panel interface in Microsoft Internet Explorer. The address bar shows <http://127.0.0.1>. The main content area displays the following information:

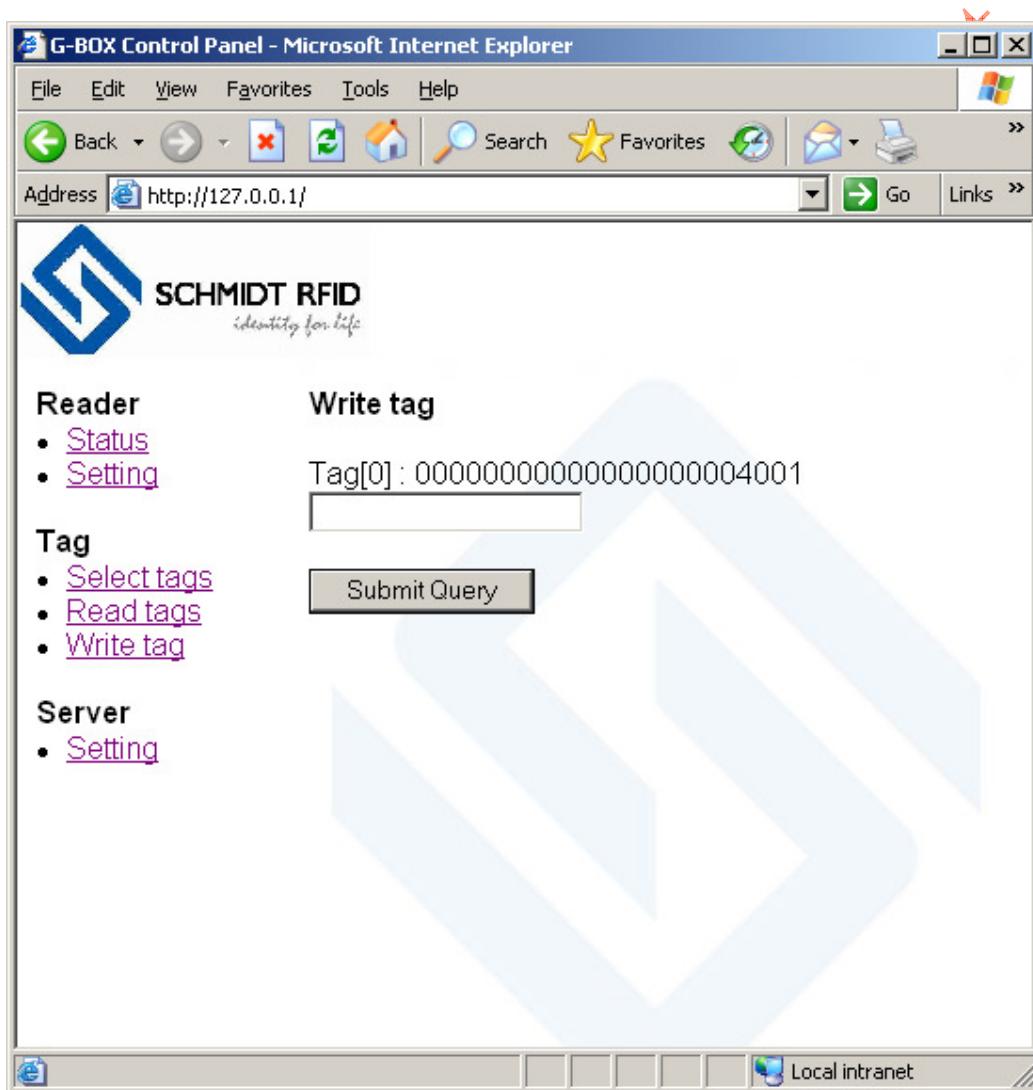
Reader	Read tag
• Status	Tag[0] : 0000000000000000000000004001
• Setting	TID : E2001050
Tag	CRC-16/PC : 20233000
• Select tags	EPC : 0000000000000000000000004001
• Read tags	Kill passwd : 00000000
• Write tag	Access passwd : 00000000
Server	
• Setting	

4.6 Write Tags

Click "Write tag" to enter "write tag" mode, RFID reader read tags and waits user update the tag ID. Click "Submit Query" to confirm change.

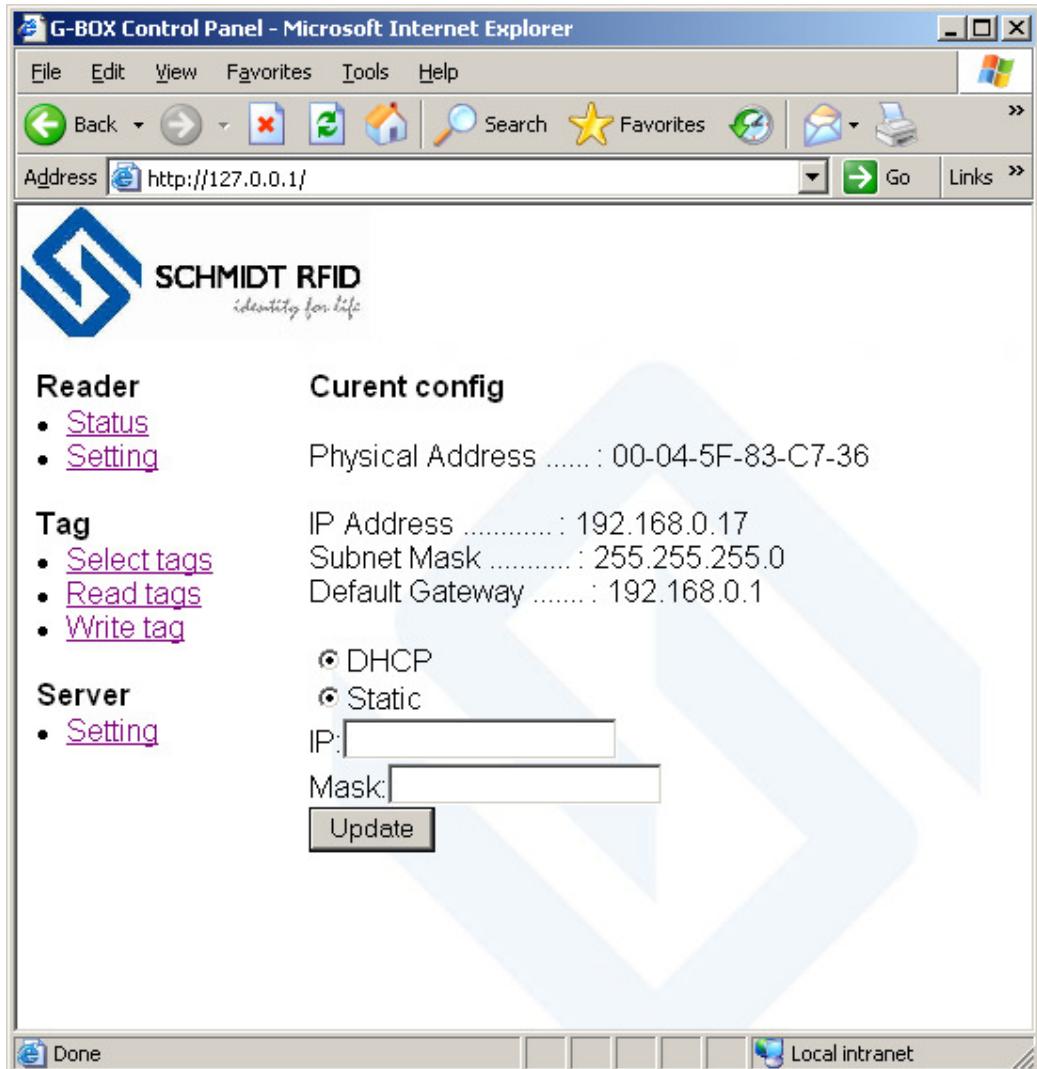
* Remarks:

- (1) do not take out the tag during writing a tag
- (2) set the power as higher as possible
- (3) do not recommend write multiple tags simultaneously



4.7 Server Configuration

Server configuration has 2 settings as DHCP and Static. When DHCP is selected, G-BOX will configure IP setting automatically. When Static is selected,



Chapter 5 GPIO interface in G-BOX

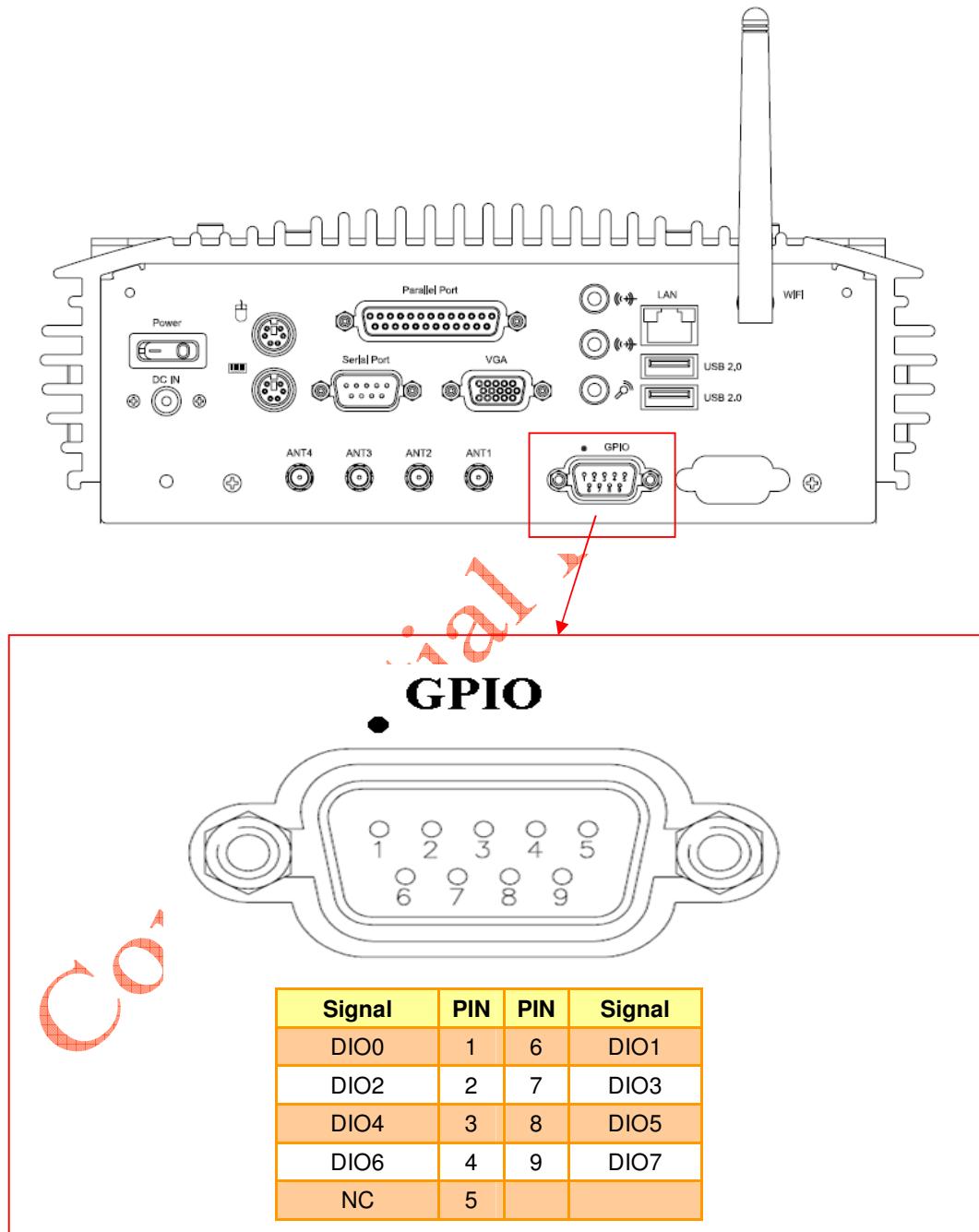
5.1 About GPIO interface

The G-BOX has eight general purpose input and output (GPIO) interfaces. They can trigger the G-BOX operations by connecting external control devices. Each interface provides digital inputs or outputs from the G-BOX terminal and designs for low voltage DC loads. Users can control the GPIO to be either input or output interface through API programming.

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5.2 GPIO Pin assignment

There are eight general purpose input and output (GPIO) interfaces in G-BOX.



5.3 Using GPIO as input interface

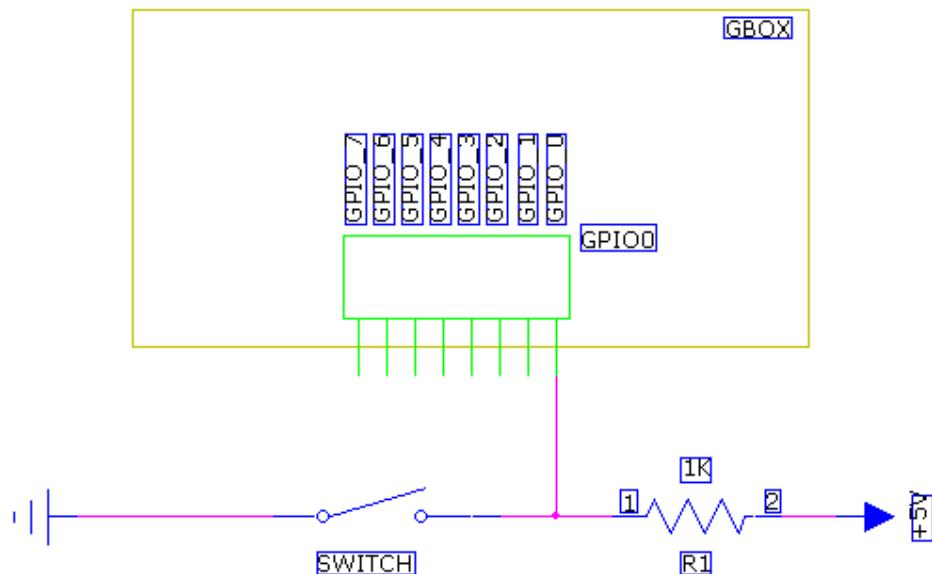
Each of the eight inputs is driven by a GPIO IC. It is compatible with input signals of 3 to 5.5 VDC. In a typical application, the G-BOX senses input from an external trigger and then starts a tag read operation.

GPIO Input specification

Digital Inputs	Min	Typ	Max
Low level input Voltage(DC)	-0.5 Vdc	--	0.3 Vdc
High level input Voltage(DC)	0.7 Vdc	--	5.5Vdc
Current	--	--	$\pm 20\text{mA}$

Note: $T_{\text{amb}} = -40$ to $+85^{\circ}\text{C}$

Reference circuit



5.4 Using GPIO as output interface

Each of the eight outputs is driven by a GPIO IC with output signals of 5 VDC. In a typical application, the G-BOX GPIO output can drive some indicators or relay to control AC load.

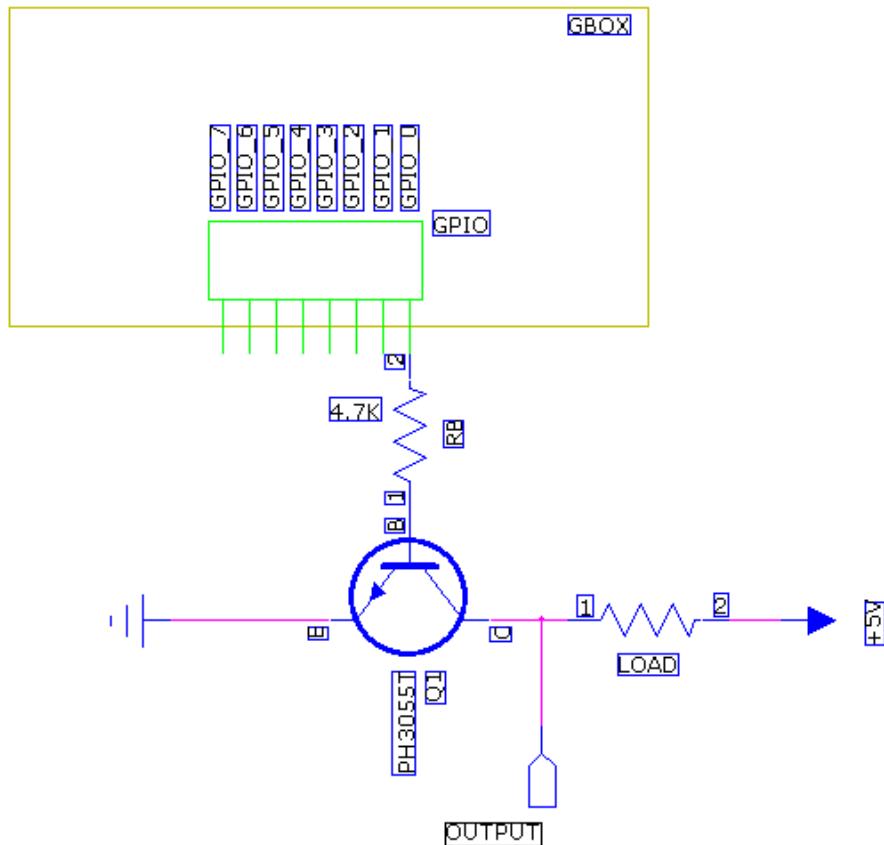
GPIO Output specification

Digital Outputs	Min	Typ	Max
Low level output voltage (DC)	0.5 Vdc		0.7 Vdc
High level output voltage (DC)	1.7 Vdc	--	5 Vdc
Current	8mA	--	± 50 mA

Note: The total current sourced by all I/Os must be limited to 160 mA.
 Each I/O must be limited to maximum of 25mA

Note: $T_{amb} = -40$ to $+85^{\circ}C$

Example circuit



Chapter 6 WiFi

6.1 About WiFi on G-BOX

G-BOX builds-in a WiFi module. This module complied with IEEE 802.11b/g standard from 2.4 - 2.5GHz. It can be used to provide up to 11Mbps for IEEE802.11b and 54Mbps for 2.4GHz IEEE 802.11g when connecting to the user wireless LAN. It also supports the advanced security with WEP/ WPA1.0/ WPA2.0 standard.

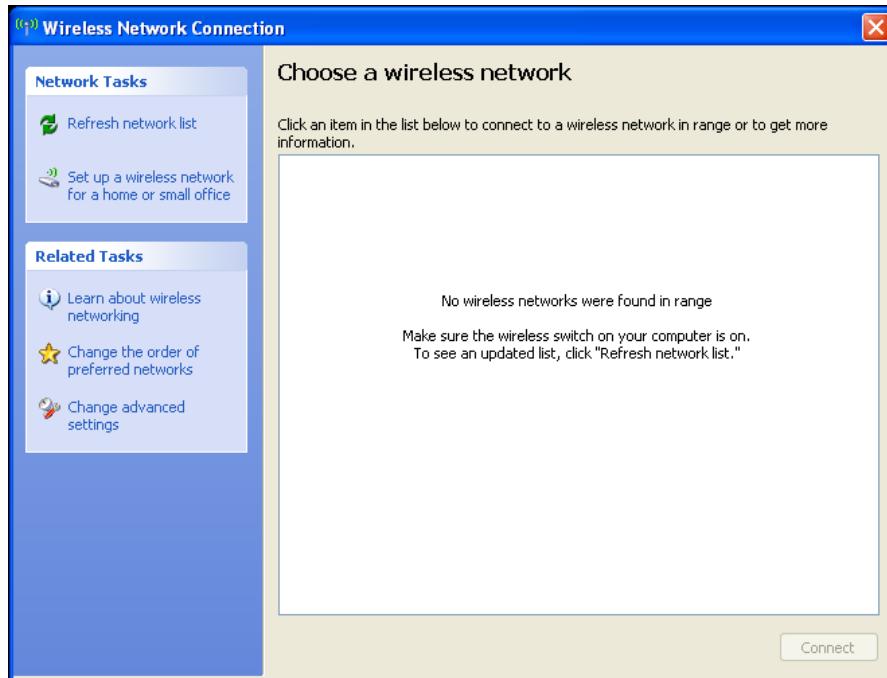
6.2 Setup procedure

Before Setup WiFi connection, please make sure

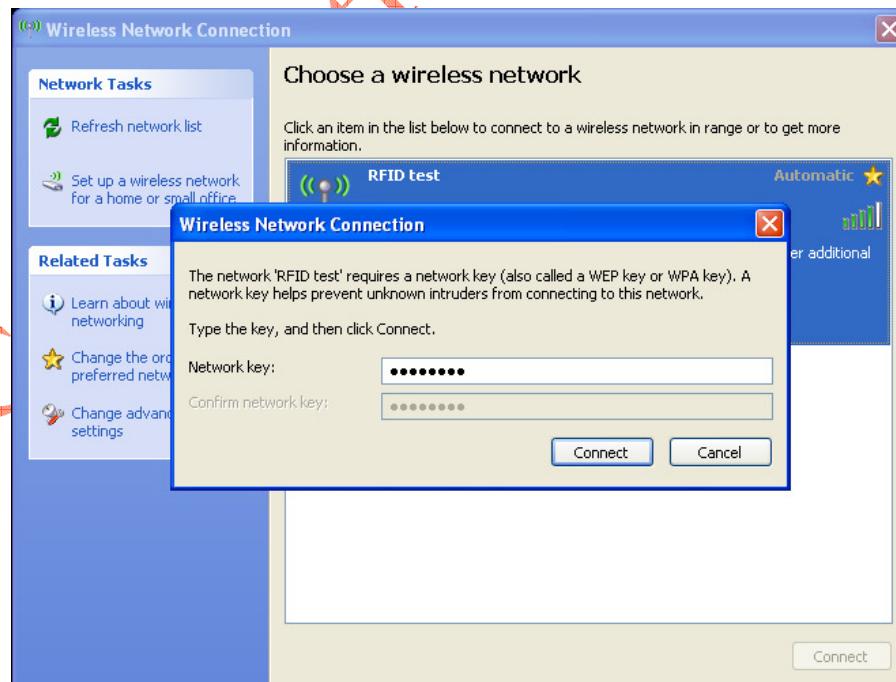
- Upgrade Windows XP embedded to Service Pack 2
- Download and install the software package support WPA2/AES from (<http://www.microsoft.com/downloads/details.aspx?FamilyID=2726f32f-d52b-4f84-ace8-f7fc20195769&DisplayLang=en>)

1. Click “Start up”, “My computer” go to “My network places”
2. Choose “View network connection”
3. Double click the icon of “Wireless Network connection”

4. Choose the wireless network which you want to connect



5. Click Connect button.
6. Enter the additional information for different types of security setting (WEP/ WPA1.0/ WPA2.0)



7. After the verification, the network can be used

Chapter 7 Regulatory Information

7.1 Federal Communications Commission (FCC) Compliance



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 when the equipment is operated in a commercial environment. 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
- Consult the dealer or an qualified radio/TV technician for assistance

FCC NOTICE: To comply with FCC part 15 rules in the United States, the system must be professionally installed to ensure compliance with the Part 15 certification. It is the responsibility of the operator and professional installer to ensure that only certified systems are deployed in the United States. The use of the system in any other combination (such as co-located antennas transmitting the same information) is expressly forbidden.

WARNING: DO NOT ATTEMPT TO SERVICE THE WIRELESS COMMUNICATION DEVICE YOURSELF. SUCH ACTION MAY VOID THE WARRANTY. THE G-BOX IS FACTORY TUNED. NO CUSTOMER CALIBRATION OR TUNING IS REQUIRED. CONTACT SCHMIDT RFID TECHNICAL SUPPORT FOR INFORMATION ABOUT SERVICING YOUR WIRELESS COMMUNICATION DEVICE.

Note:

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

7.1.1 Radio Frequency Radiation Exposure

The highest RF output power of the unit was measured at 27.0dBm at 915 MHz. According to §1.1310 of the FCC rules, the power density limit for General Population/Uncontrolled Exposure at 915 MHz is $f_{(\text{MHz})}/1500 = 0.610\text{mW/cm}^2$. The

MPE is calculated to show the required separation distance that must be maintained during installation to maintain compliance with the power density limit. The minimum required cable length is 1.5m to be used with this device.

The following formula was used to calculate the Power Density:

$$S = \frac{PG}{4\pi R^2}$$

Where:

S = Power Density

P = Power input to the external antenna (Output power from the EUT antenna port_(dBm) – cable loss_(dB))

G = Gain of Transmit Antenna (linear gain)

R = Distance from Transmitting Antenna

The power density at 20cm separation is:

$$S = \frac{PG}{4\pi R^2}$$

For this device, the calculation is as follows:

P = **27.0**dBm (Output power from the EUT antenna port) – 0.75dB (cable loss*)

= **26.25** dBm (= **421.696**mW)

*Cable loss = (0.75dB) : 1.5m long of 0.5dB/m loss

G = Worst Case Antenna Gain = **8.0**dB_i = anti-log(**8.0**/10) = **6.31**

At 20cm separation,

$$S = ((421.696) \times (6.31)) / (4 \pi (20)^2) = 0.529\text{mW/cm}^2$$

Based on the above calculation for 20cm separation, the power density does not exceed FCC limit of 0.610mW/cm².

7.2 CE



This device has been tested to and conforms to the regulatory requirements of the European Union and has attained CE Marking. The CE Mark is a conformity marking consisting of the letters "CE". The CE Mark applies to products regulated by certain European health, safety and environmental protection legislation. The CE Mark is obligatory for products it applies to: the manufacturer affixes the marking in order to be allowed to sell his product in the European market.

The CE Marking is not a quality-mark. Foremost, it refers to the safety rather than to the quality of a product. Secondly, CE Marking is mandatory for the product it applies to, whereas most quality markings are voluntary.

Confidential Document

Chapter 8 Disclaimer Notice

Disclaimer Notice

The manufacturer shall not be liable for errors contained herein or for incidental or consequential damages in connection with the furnishing, performance or use of this material. This document contains proprietary information, which is protected by international patent applications and copyright. All rights reserved. No part of this document may be copied, reproduced or translated without prior written consent of the manufacturer. The manufacturer reserves the right to revise this publication and to make changes from time to time in the contents hereof without obligation to notify any person of such revisions or changes. The manufacturer also reserves the right to change the specifications without notice.

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Chapter 9 Warranty

LIMITED WARRANTY TO ORIGINAL PURCHASER

Disclaimer

This limited warranty covers manufacturing defects in materials and workmanship encountered in normal, noncommercial use of this product. SCHMIDT RFID is not liable for any equipment that is caused by negligence or improper installation use of this reader. This warranty is invalid if reader with altered serial numbers, damaged warranty label, failure to follow operating instructions, customer adjustments, use of non-SCHMIDT RFID parts, supplies, accessories or equipment which damage this product or result in service problems; failures or problems due to incompatibility with other equipment.

Schmidt RFID manufactures its hardware products in accordance with industry-standard practices. Schmidt RFID warrants that for a period of twelve (12) months from date of shipment, product will be free from defects in materials and workmanship. This warranty is provided to the original owner only and is not transferable to any third party. It shall not apply to any product (i) which has been repaired or altered unless done or approved by Schmidt RFID, (ii) which has not been maintained in accordance with any operating or handing instruction supplied by Schmidt RFID, (iii) which has been subjected to unusual physical or electrical stress, misuse, abuse, power shortage, negligence or accident, (iv) which has been used other than in accordance with the product operating and handling instructions. The Customer must notify Schmidt RFID in writing within 7 days of the alleged defect first coming to the Customer's notice, and the Customer must at this time also state the date and place of the purchase. Preventive maintenance is the responsibility of customer and is not covered under this warranty. Schmidt RFID shall not be responsible for any defect in products arising as a result of defects in any third party software or hardware.

Warranty coverage and procedure

During the warranty period, Schmidt RFID will repair or replace defective products returned to Schmidt RFID headquarter in Hong Kong (please see the contact address and detail in website "www.schmidtrfid.com"). Product must be shipped in the original or comparable packaging, shipping and insurance charges prepaid by the customer. The warranty does not include any accessories, removal or reinstallation, insurance prepaid and shipping charge. The removal of the defective equipment and the installation of any repaired or replacement parts shall be performed by the customer at its own expense.

Subject to any service contract between the Customer and Schmidt RFID and with respect to products not capable of removal and return to Schmidt RFID, in such cases Schmidt RFID will use its best endeavors to remedy any defect by remote repair, advice or upgrade. In the event

that such defect is not able to be repaired in the manner provided above. Schmidt RFID will at the customer's request, undertake repairs at the cost of the customer.

Schmidt RFID will use or refurbished parts at its discretion and will own all parts removed from repaired products. The customer will pay for the replacement product in case it does not return the replaced product to Schmidt RFID within 3 days of receipt of the replacement product. The process for return and customer's charges will be in accordance with Schmidt RFID's Exchange Policy in effect at the time of the exchange.

The customer accepts full responsibility for its software and data including the appropriate backup thereof. Repair or replacement of a product during warranty will not extend the original warranty term.

General

Except for the warranties stated above, Schmidt RFID all disclaims, express or implied, on products furnished implied warranties of merchantability and fitness for a particular purpose. The stated express warranties are in lieu of all obligations or liabilities on part of Schmidt RFID for damages, including without limitation, special, indirect, or consequential damages arising out of or in connection with the use of performance of the product.

Schmidt RFID's liability for damages to buyer or others resulting from the use of any product shall in no way exceed the purchase price of said product, except in instances of injury to persons or property. Some states (or jurisdictions) do not allow the exclusion or limitation of incidental or consequential damages, so the proceeding exclusion or limitation of incidental or consequential damages, so the proceeding exclusion or limitation may not apply to you.

Chapter 10 Support

Technical support/Sales Enquiry can be obtained from SCHMIDT RFID.

Please email to: gbox@schmidtrfid.com

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