日晶科技股份有限公司 / Sunlit System Technology Corp.
µ-Chip System Development

RFID RF Module User's Guide

Model Number: SLF-10100

Model Name: RF Module v4.0

Edition version: 1.0

Date: 2006.11.28

Regulatory Approvals

FCC Statement

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 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.

To assure continued compliance, any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment. (Example - use only shielded interface cables when connecting to computer or peripheral devices).

FCC Radiation Exposure Statement

This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body.

This device complies with Part 15 of the FCC Rules. 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.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

The antennas used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

Channel

The Wireless Channel sets the radio frequency used for communication.
- Access Points use a fixed Channel. You can select the Channel used. This allows you to choose a Channel which provides the least interference and best performance. In the USA and Canada, 11 channel are available. If using multiple Access Points, it is better if adjacent Access Points use different Channels to reduce interference.
- In "Infrastructure" mode, Wireless Stations normally scan all Channels, looking for an Access Point. If more than one Access Point can be used, the one with the strongest signal is used. (This can only happen within an ESS.)
- If using "Ad-hoc" mode (no Access Point), all Wireless stations should be set to use the same Channel. However, most Wireless stations will still scan all Channels to see if there is an existing "Ad-hoc" group they can join.

日晶科技股份有限公司 / Sunlit System Technology Corp.
μ-Chip System Development

Index

<div style="border: 2px solid red;">

Notice:

In order to avoid misuse or any unexpected damage, please read this guide first.

This device complies with Part 15 of FCC Rules. 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

</div>

1. Hardware

(1) Pin Description
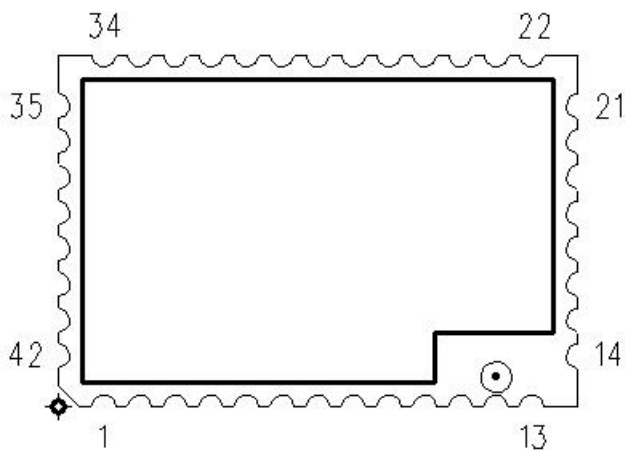
Pin No.	Pin Name	Pin Function
1,2,5,11~25, 27~29,31~38	GND	Ground
3	LED	LED Display
4,6,7,8,26,30	NC	No Connect
9	TXD	Transmitter Output For The Serial Port
10	RXD	Receiver Input For The Serial Port
39	PEN	Power Supply Enable
40~42	VCC	Power Supply

(2)　Package Outline
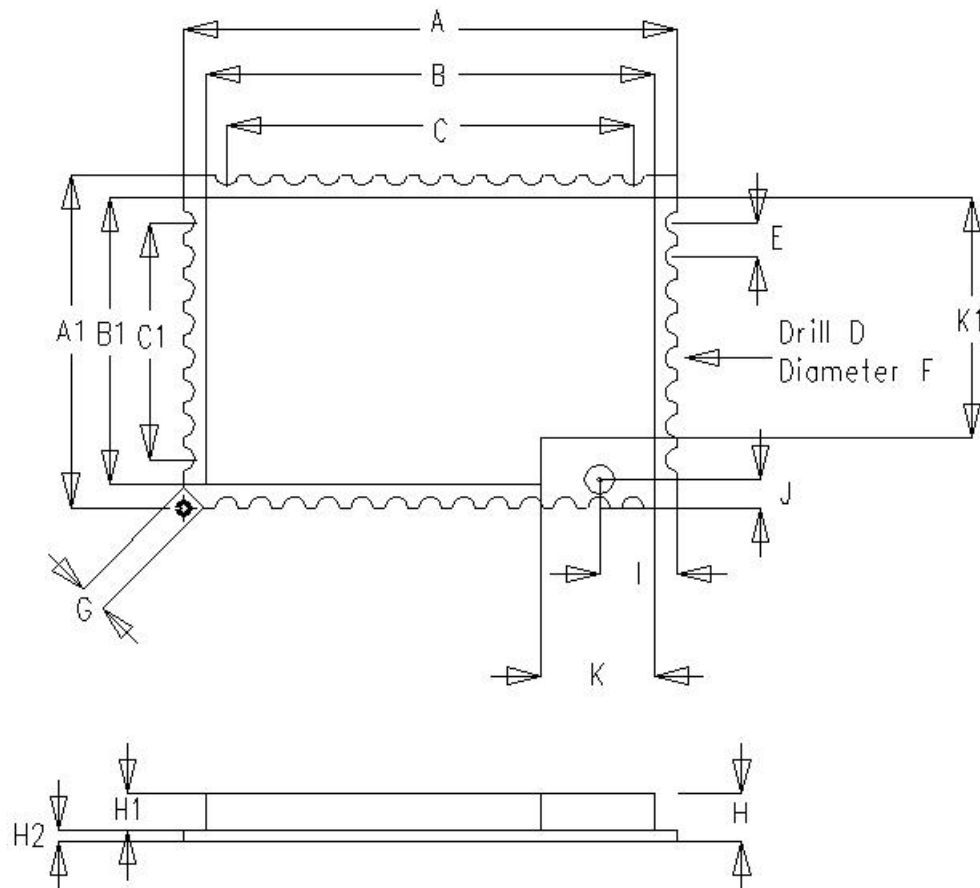
SIMBOL	MILLMETERS			INCHS		
	MIN.	MON.	MAX.	MIN.	MON.	MAX.
A	35.89	37.00	38.11	1.413	1.457	1.500
A1	24.25	25.00	25.75	0.955	0.984	1.014
B	32.79	33.80	34.81	1.291	1.331	1.371
B1	21.15	21.80	22.45	0.833	0.858	0.884
C	29.57	30.48	31.39	1.164	1.200	1.236
C1	17.25	17.78	18.31	0.679	0.700	0.721
D	0.86	0.89	0.92	0.034	0.035	0.036
E	2.54 BSC			0.1BSC		
F	1.48	1.52	1.57	0.058	0.060	0.062
G	2.06	2.12	2.18	0.081	0.084	0.086
H	3.49	3.60	3.71	0.137	0.142	0.146
H1	2.72	2.80	2.88	0.107	0.110	0.114
H2	0.78	0.80	0.82	0.031	0.031	0.032
I	5.63	5.80	5.97	0.221	0.228	0.235
J	2.04	2.10	2.16	0.080	0.083	0.085
K	8.25	8.50	8.76	0.325	0.335	0.345
K1	17.75	18.30	18.85	0.699	0.720	0.742

Figure: Package Outline – 42 Pin 37mm x 25mm x 3.6mm Surface Mount Module

(3)　Specification

Power Supply Voltage	DC 4.5V ~ 6.5V　500mA
RF Output Power	100 mW (Contact)
Trigger Mode	Active & Passive
LED Lamp	Power on & Read TAG(Pin Output)
Interface	RS-232(TTL Level)
Pin Output	44 Pin
PCB Layer	4 Layer
Outer Antenna	U.FL Connector
Operation Temperature	0　C ~ 45 C
Storage Temperature	0 C ~ 60 C
Frequency Range	2.40 GHz ~ 2.483 GHz
Environment Requirement	Storing Humidity 5-85%RH(no condensation allowed)
Dimensions	37 x 25 x 2.8 (mm)

2. Software Operation
(1) Environment

Antenna

Load board

RFID Module

RS232 Interface

DC Power
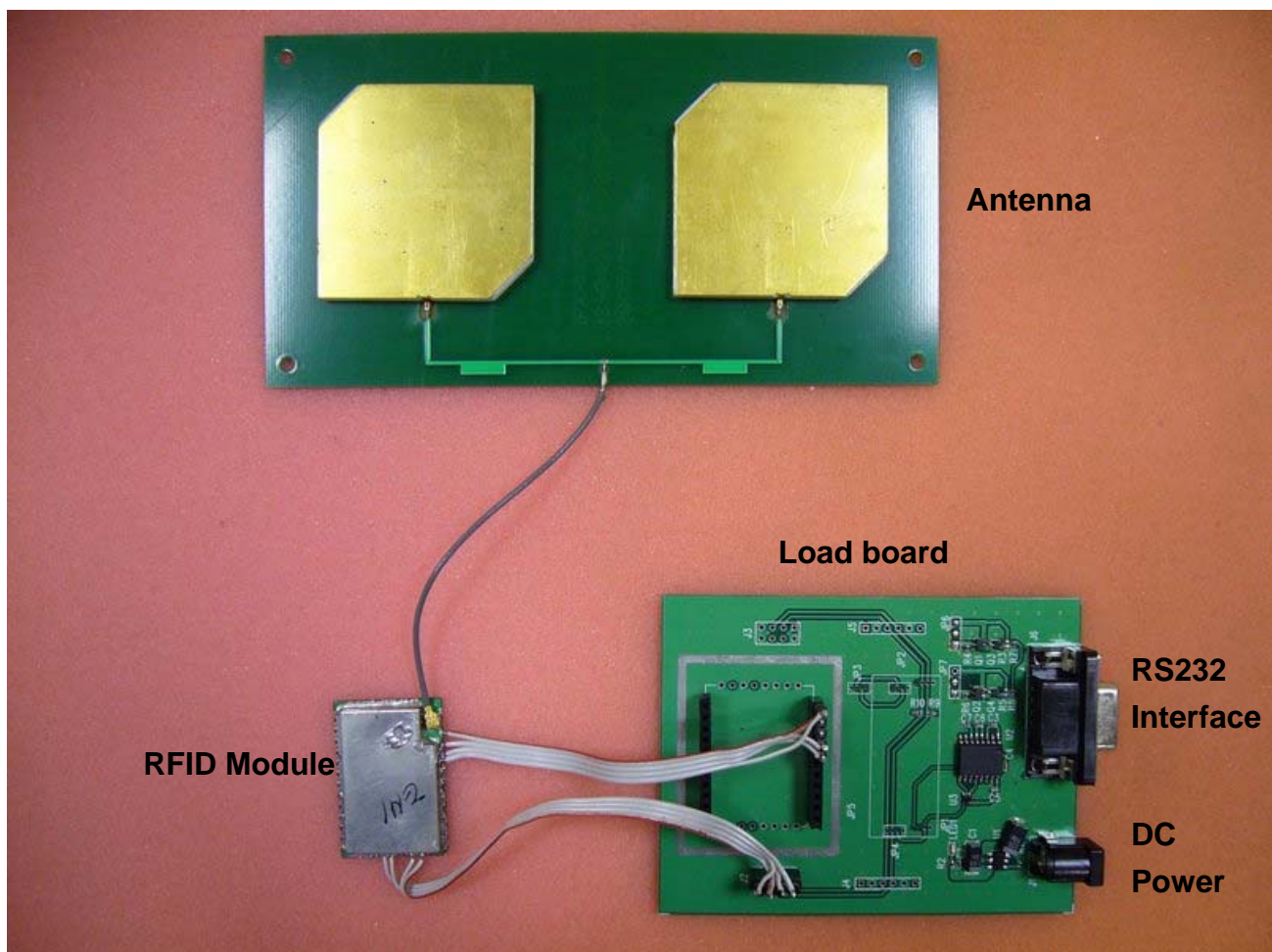
(2) Operation Requirement

Item	Condition
PC	CPU≧ Intel Pentium Ⅲ RAM≧128 MB CD/DVD-ROM
Operation System	Windows XP Windows 2000 SP4

(3) Software introduction

This software program can build a database include TAG ID、TAG information and picture.It can be use to demo for material management、access control… etc.

Software contents

Item	Description	
Development tool	Microsoft Visual Studio 2005 Traditional Edition	
File contents	DemoDTR.exe	Main program
	Sunlitrfid.dll	Dynamic Link Library file
	Database.txt	ID database file
	PIC [Folder]	A picture file includes different pictures which correlated with each individual ID

System requirement

Item	Condition
Personal Computer	CPU$\geq$ Intel Pentium Ⅲ RAM$\geq$128 MB CD/DVD-ROM
Operation System	Windows XP Windows 2000 SP4

Main Program Window
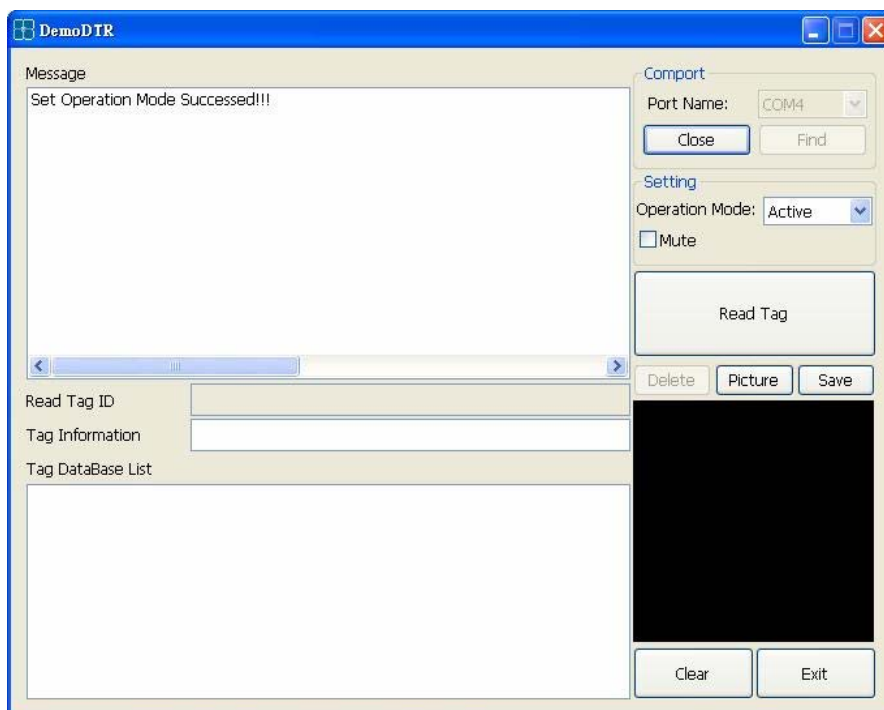
Item	Description	Item	Description
Port Name	Show Device Comport	**Save**	Save registered database
Open/Close	Open & Close Device Comport	**Clear**	Clear text of Message window
Find	Finding Comport when device add	**Exit**	Exit program
Operation Mode	Select Active or Passive Operation mode	**Tag Data Base List**	Display registered database
Mute	Disable & Enable reading sound	**Tag Information**	Edit information about Tag ID
Read Tag	Trigger reader to scan tag	**Read Tag ID**	Display Tag ID when Tag be read.
Delete	Delete database	**Message**	Display status of reader
Picture	Select picture correct with ID		

Block Diagram
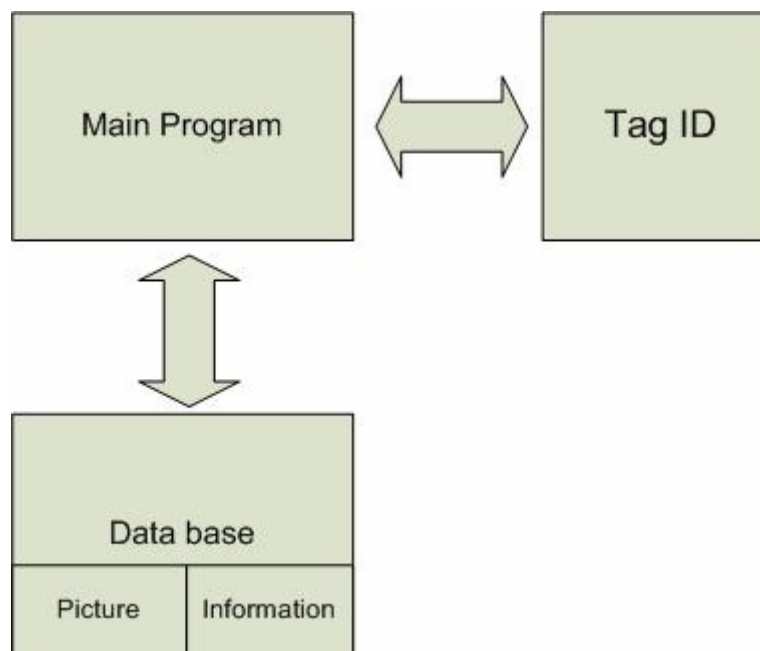
(4) Software Operation
(a) Copy software program files "**DemoDTR.exe**" & "**sunlitrfid.dll**" to PC and store at same directory.
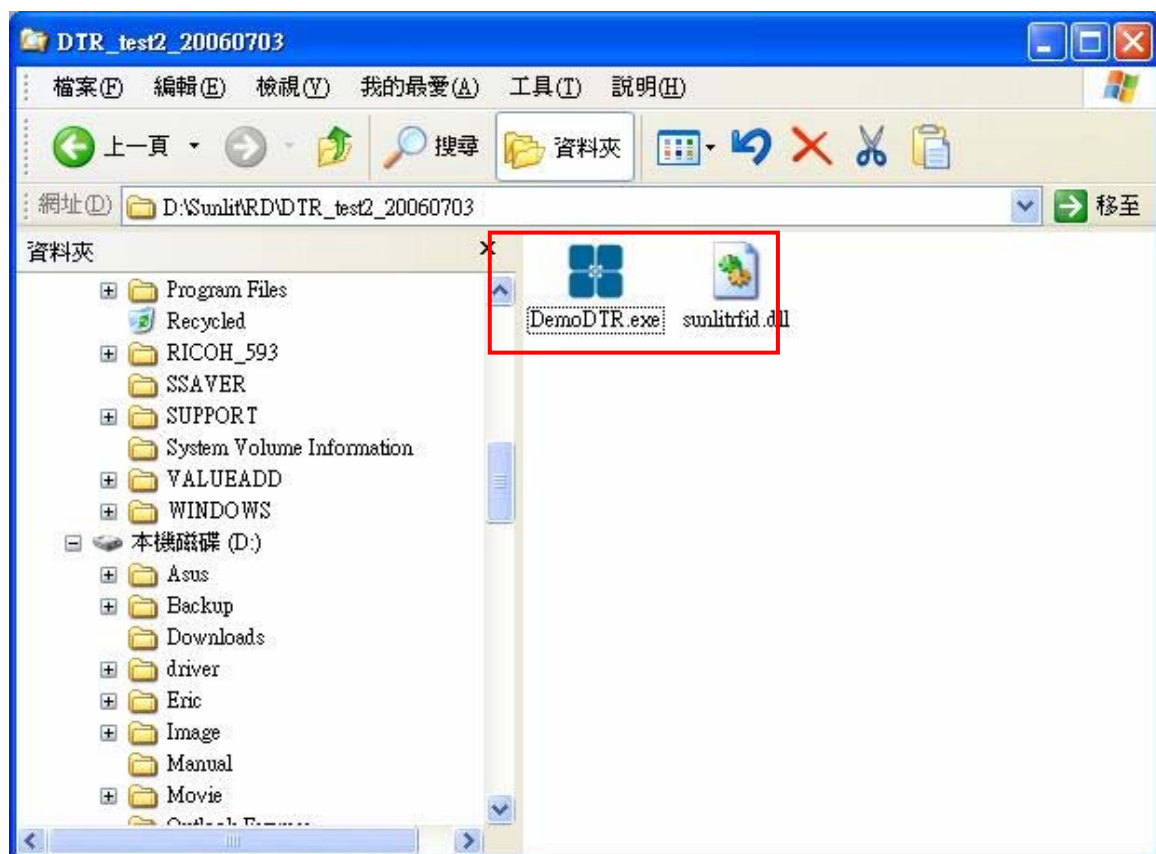
(b) Connect RS-232 cable & DC 5V power adaptor to reader.

(c) Double click file "**DemoDTR.exe**" to open the demo program window.
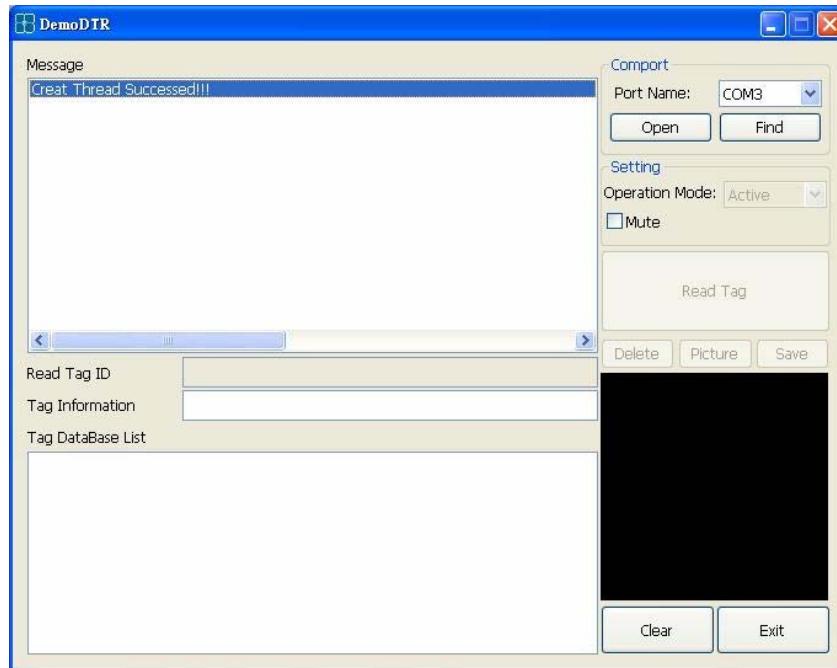
(d) Choose "**Port Name**" , from what the Device connected comport of PC.

This example port name is "**COM4**" and click "**Open**" to open device(reader)
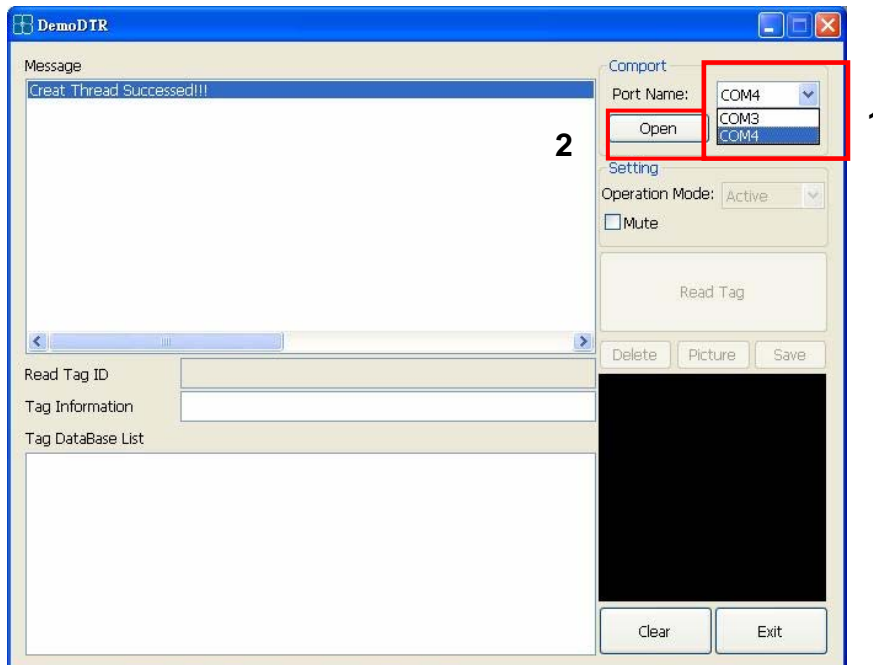
(e) When device was opened, then **Open** item will change to **Close**
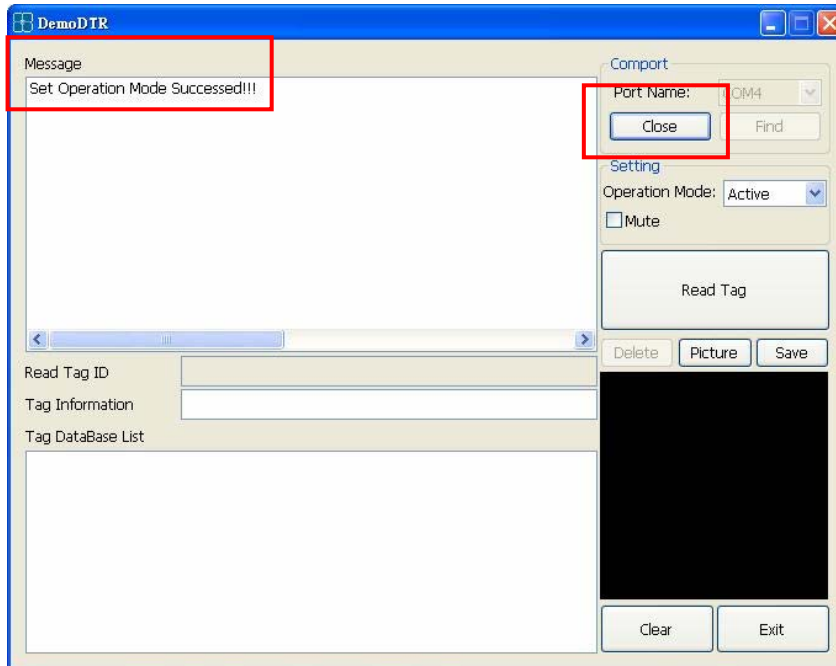
(f)Create a data base.

Set operation mode to "**Passive**"
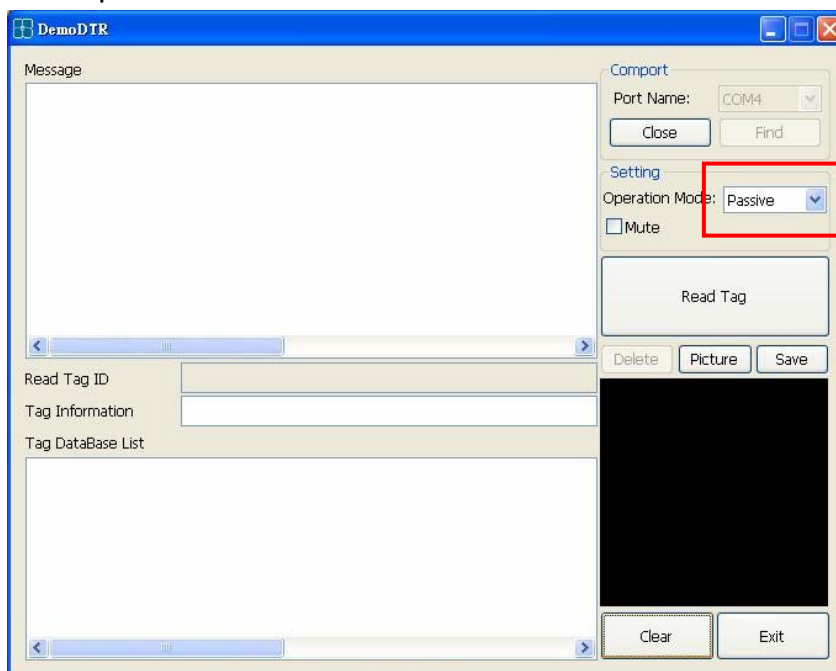
※**Passive**: Click "**Read Tag**" once and reader will scan once.

Click "**Read Tag**" to read Tag and Tag ID will show on **Message** window
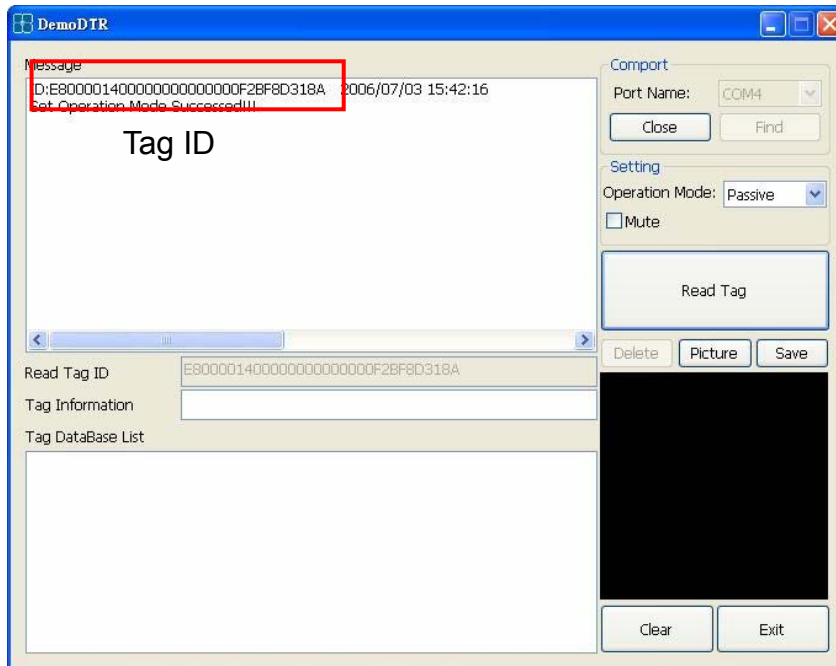
Choose picture that you want to correct with Tag ID.

Click "**Picture**" to select picture.

※This is based on the pictures that each User's PC has, we do not provide any picture.

User needs to put pictures in PC in advance.
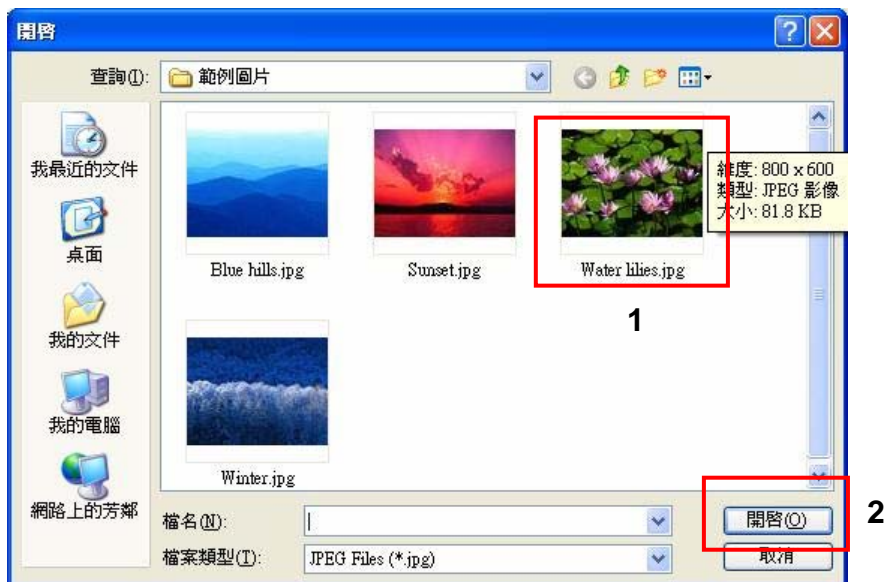
After choose picture, edit **Tag Information** and click "**Save**".
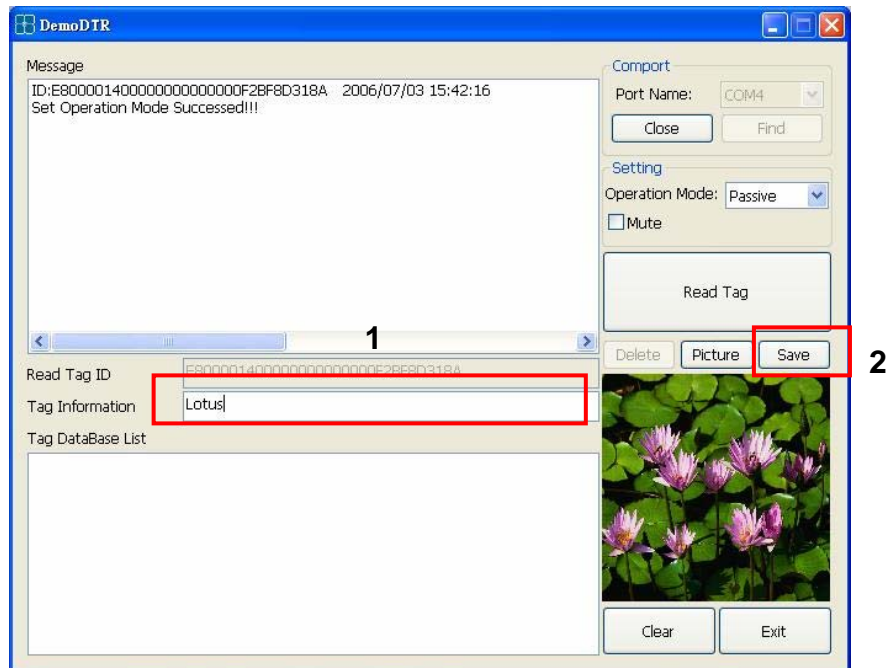
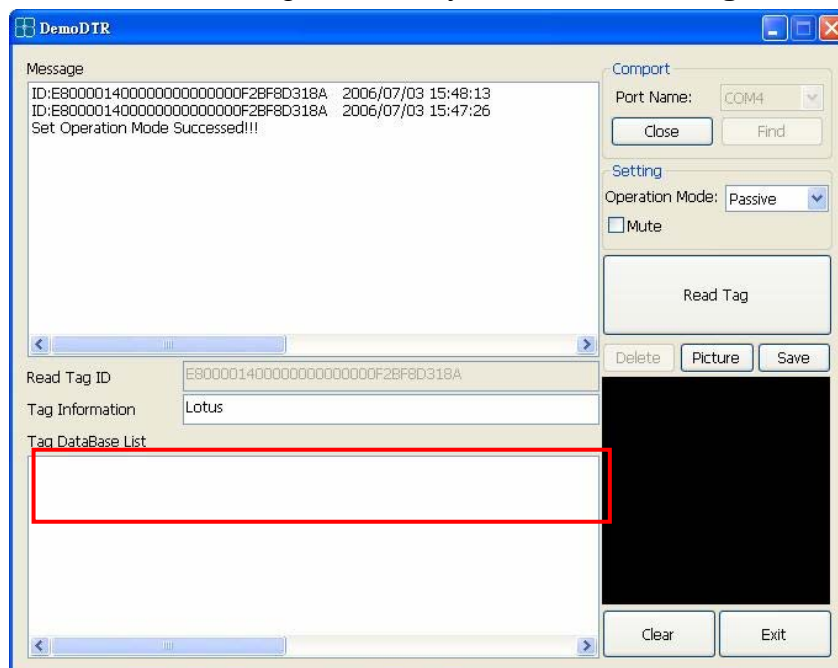When click **Save**, you will see the register data on "**Tag DataBase List**" window.
It means data registered successfully.
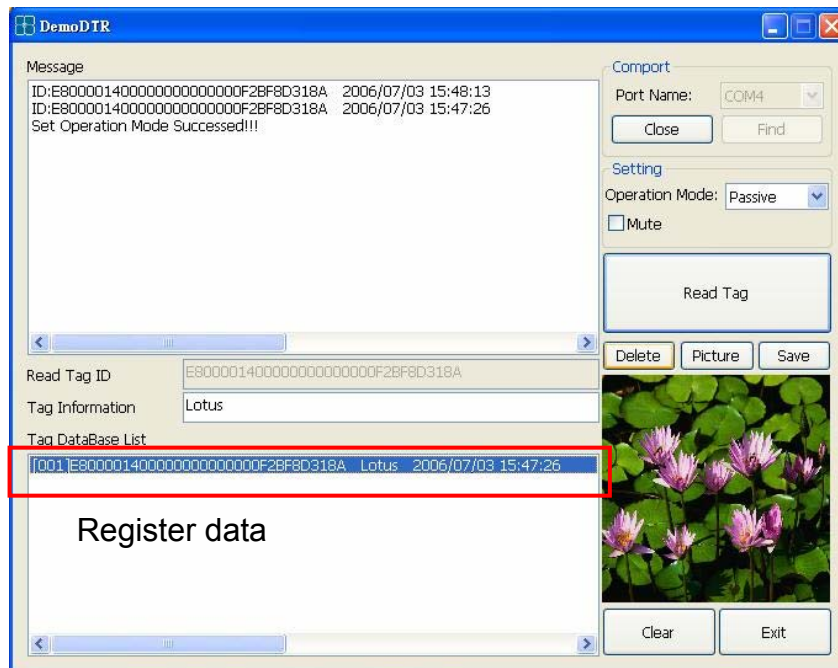
(g) Delete data base

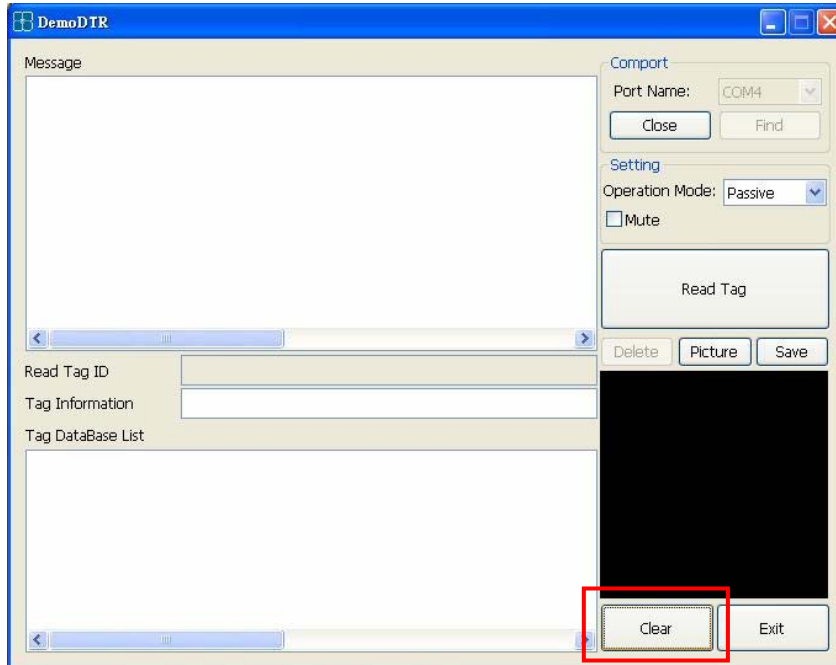Click data base you want to delete and click "**Delete**"
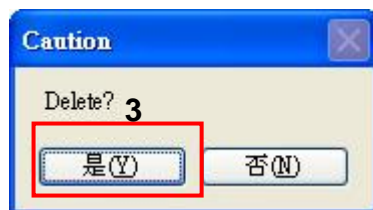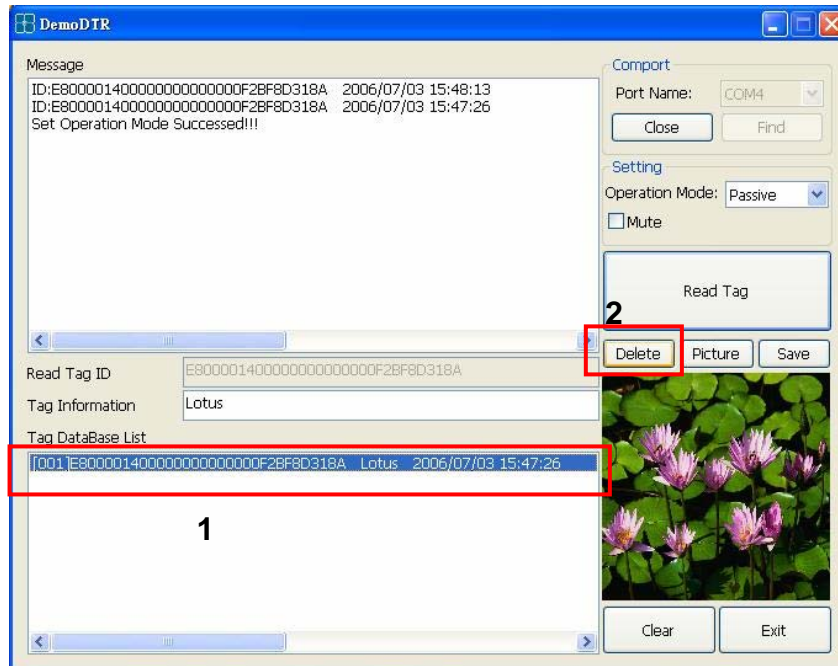
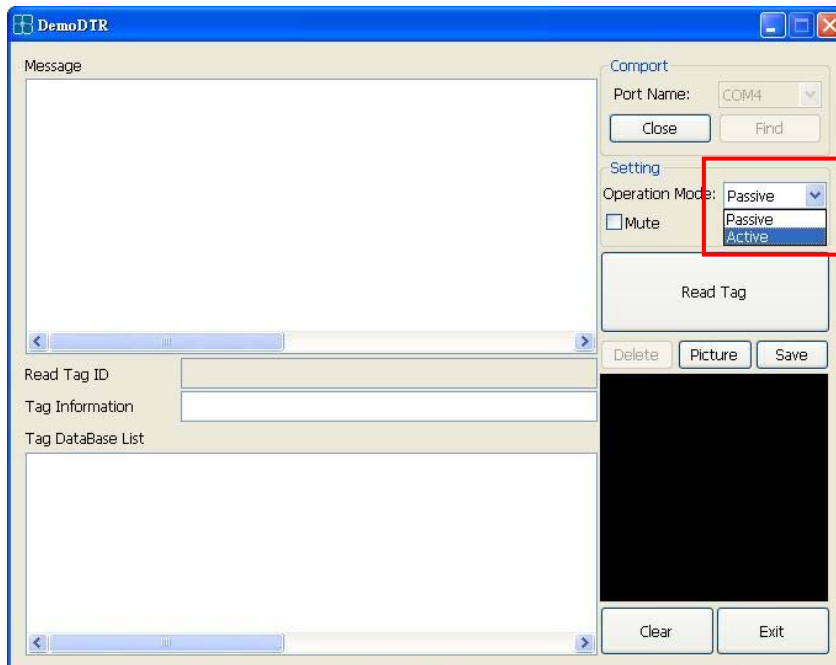When delete the register data, you will see the "**Tag DataBase List**" window is no data.

(h) Clear information

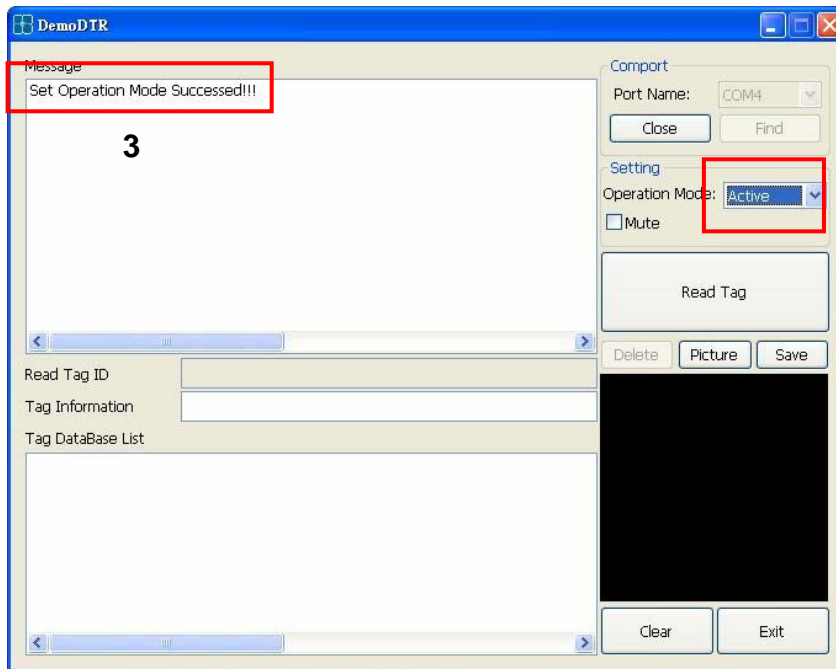When you click "**Clear**", the message of "**Message**" & "**Tag DataBase List**" window will be clear.

(i) Set operation mode to "**Active**"

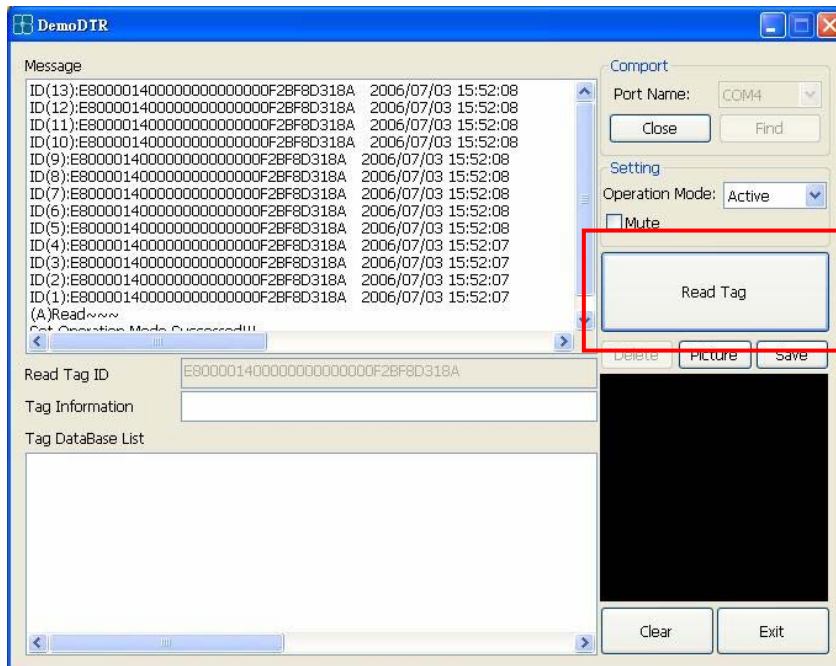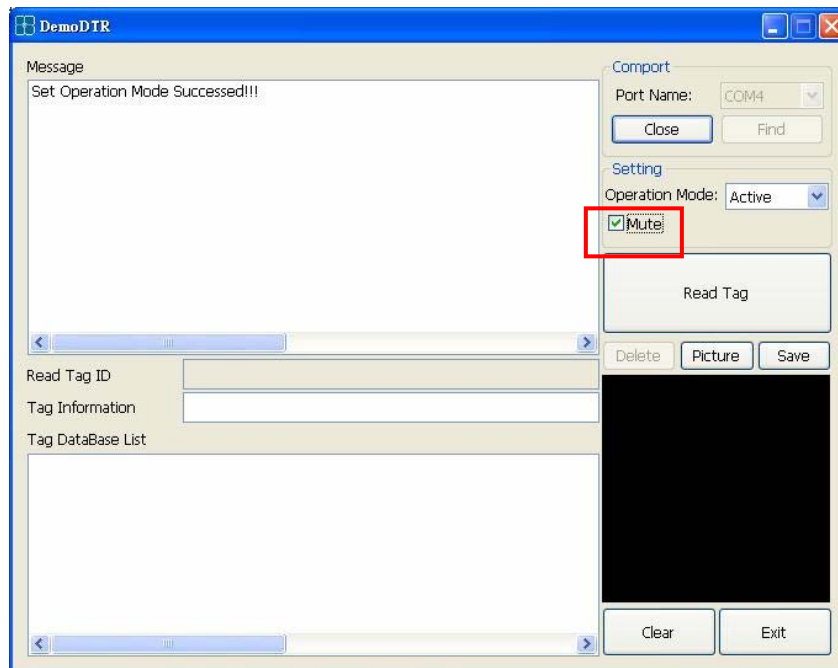※**Active**: Click "**Read Tag**" once and reader will scan continuously.

Click "**Read Tag**" once, Reader will read tag ID continuously until you remove tag.

(j) Set Operation mode to "**Mute**"

Check "**Mute**" box to enable mute function.

3. How to Contact Us

For further information or in case of difficulties please contact
Sunlit System Technology Corp.
www.sunlitcorp.com

8F, No.19, Lane 120, Sec.1, Neihu Rd., Taipei Taiwan 114 R.O.C.
webmaster@sunlitcorp.com
TEL: 886-2-66006351
FAX: 886-2-6600-6765