# Shenzhen RodinBell Technology Co., Ltd. D-100 UHF RFID Desktop Reader User Manual V1.1



# Catalogue

<u>1. D-10X View</u>
1-1: Front View
1-2: Back View
1-3: Plan View
2. Reader Configurations 4
2.1 Initial Use4
2.1.1 Step 1: Connect The Reader to PC via USB or Serial Port4
2.1.2 Step 4: Operating Reader via Demo5
2.2 Setting RF Parameter 6
2.2.1 Setting RF Output Power
2.2.2 Setting RF Spectrum
2.3 ISO-18000-6C tag inventory7
2.3.1 Real Time Mode & Buffer Mode7
2.4 Accessing ISO-18000-6C Tag10
2.4.1 Read tags
2.4.2 Write Tags 11
2.4.3 Lock Tags
2.4.4 Kill Tags
2.4.5 Tag Selection
2.4.6 Error Display Might Be Returned13
3. Develop your own RFID Application15
4. Installing Driver

# 1. D-10X View



1-1: Front View



1-2: Back View



1-3: Plan View

# 2. Reader Configurations

# 2.1 Initial Use

# 2.1.1 Step 1: Connect The Reader to PC via USB or Serial Port

Method NO.1: You can connect the reader to your PC via USB Cable, as illustrated below:



Next, please switch the DIP to the position as illustrated below:



Method NO.2: You can also connect the reader to PC via RS-232 serial port, as illustrated below:



Next, please switch the DIP to the position as illustrated below:



When the indicator light on and sound of a short beep, reader is ready. Note: Driver will be installed automatically when reader is connected to PC for the first time. But some computers may fail. In this case, please install driver manually. (please see: Installing Driver at page 21).

#### 2.1.2 Step 4: Operating Reader via Demo

Put the files that named **UHFDemo.exe**, **reader.dll**, **customControl.dll** into a same folder, and double-click **UHFDemo.exe** to run the software.

1. Open the software and it will shows as below:

ormection       ormection       set       set	Get
S-232 Serial Fort: 0001 Connect Baudrate: 115200 Disconnect Set Baudrate: Set CP/IP Reader IP Add; 192, 168, 0, 178 Port: 4001 Disconnect Fort: 4001 Disconnect	Get
Serial Port: COMMI	Get
Baskrate:         115200         Disconnect         Read/Write GPI0           Set Baskrate:         •         Set         GPI01:         High         Low           CCP/IP         GPI02:         High         Low         GPI02:         High         Low           CP/IP         GPI02:         High         Low         GPI02:         High         Low           Port:         4001         Disconnect         Write GPI0         GPI02:         High         Low	
Set         Op101:         High         Low           CCP/IP         GP102:         High         Low           Reader IP Add:         192. 188. 0. 178         Connect         GP102:         High         Low           Port:         4001         Disconnect         Write GP10         GP10         GP10	
CCP/IP         GPI02:         High         Low           Reader IP Add:         192, 168, 0, 178         Connect         Write GPI0           Port:         4001         Disconnect         Write GPI0	
Port: 4001 Disconnect	Read
Port: 4001 Disconnect	
0PI03: OHigh OLow	Write GPI03
ES-485 Address(HEX) GPI04: OHigh OLow	Write GPIO4
Reader Identifier(12 Bytes)	
Get 🔘 Quiet	
© Beep after an inventory round	
Deep after a tag is identified. (For test only)	Set
Reset Reader	Refresh

2. Please select **RS232** as **Connection** if the reader is connected via RS -232 port, or select **USB** as **Connection** if the reader is connected via USB. Choose the corresponding **Serial Port** and **Baudrate**(default baudrate is 115200). As illustrated below:

Connection		© TCP/IP
RS-232 Serial Port:	COM1	Connect
Baudrate:	115200 💌	Disconnect

3. Click **Connect**, if it succeeds, the **Operation History** will display as below:



4. Text communication with the reader:

Click on Get in Firmware Version or in Reader Identifier, the following screen displays:

nnection		Firmware Version			$\frown$
@ RS232	C TCP/IP		6.9		Get
-232		Internal Temperature			
Serial Port: COM5 -	Connect				Get
Baudrate: 115200 🔹	Disconnect	Read/Write GPIO Read GPIO			
Set Baudrate:	Set	GPI01:	🔘 High	C Low	
P/IP Reader IP Add: 192, 168, 0, 178	Connect	GPI02:	🔘 High	C Low	Read
D		Write GPIO			
Port: 1001	Disconnect	GPIO3:	🔘 High	C Low	Write GPI03
-485 Address(HEX) 01	Set	GPIO4:	🔘 High	C Low	Write GPI04
ader Identifier(12 Bytes)		Buzzer Behavior			
FF	F Get	🔘 Quiet			
		Beep after     Beep after     Seep after	an invento	ry round	
	Set	🔘 Beep after	a tag is i	dentified.(For test only)	Set
Reset Read	er				Refresh
ation History: 📝 Auto Clear				Ac	tivate Serial Port M
4-02 15:06:42 Reader connected COM501	15200				

Now the reader has been connected to PC successfully.

# 2.2Setting RF Parameter

After connecting the reader with PC, we need to set some basic RF parameters: RF Output Power & RF Spectrum. Please select **RF Setup** as illustrated below:

WHF RFID Reader Demo v3.62												
Reader	Setup	18000-6C	Tag	Test	ISO	18000-6B	Tag	Test	Serial	Port	Monitor	
Basic	Setu	RF Setup										

# 2.2.1 Setting RF Output Power

RF Output Power is the strength of RF output signal from antenna port whose unit is dBm.

-RF Output Po	wer			
	26	dBm	Get	Set

The output power range is 0 - 26dBm. When this setting completes, it will be saved in the reader automatically even if the power is cut off. The default output power is 26dBm.

# 2.2.2 Setting RF Spectrum

Set the RF spectrum manually.

• Please defer to Frequency parameter tablet in Communication protocol for more information about

the carrier frequency.

• Frequency range the reader supports: 865MHz-868MHz(ETSI), 902MHz -928MHz(FCC). You can set the reader in **RF Spectrum Setup**->**User Define**, as illustrate below:

-RF Spectrum Setu	ąp							
	System Default	Frequencies —						
	◎ FCC	🔘 ETSI	CHN	Freq Range:	▼ MHz —	▼ MHz		
							Get	Set
	User Defined Fr	equencies						
🔲 User Define	Start Frequ	lency:	KHz	Freq Space:	KHz Quantity	:		

Users can set RF spectrum via these three parameters: Start Frequency, Frequency Interval, The number of Frequency points.

# 2.3 ISO-18000-6C tag inventory

Connect the Reader correctly. Tag operation could be started when RF Setup is completed. **Tag inventory** means reader identifying multiple tags'EPC number at the same time. This is the core function of UHF RFID Reader and one of the standards to judge a reader's performance.

# 2.3.1 Real Time Mode & Buffer Mode

The most commonly used mode for tag inventory is**Real-time Mode**. Data will be uploaded meanwhile you can get the tags'EPC number instantly. **RSSI** and **Parameter of Frequency** are changed and recorded in real time. Due to its dual CPU architecture, performance of multi-tag identification under **Real-time** mode is the best.

The other is **Buffer Mode**, the data will be cached and uploaded together when you need them. Under this mode, the data are without repeat data and can keep in small volume, because the data will be filtered before being uploaded. But it will take some time to filter duplicate data when reader identifies a large number of tags. Therefore, its identification efficiency will be slightly lower than real-time mode. Note: Tags can't be operated when you extract data in the cache.

Users can choose the appropriate method based on actual situation as illustrated below:

UHF RFID Reader Demo v3.62 Reader Setup 18000-6C Tag Test 30 18	3000-6B Tag Test Serial Port Monit	or		
Tag Inventory(Real Time Mode) Tag Inv	ventory(Buffer Mode) Tag Inventory	(Fast Swith Antenna Mode) Access	7 Tag	
Inventory	Repeat Per Command 1	🔲 User Define Session	Session ID: SO 💌	Inventoried Flag 🔺 💌

# Method NO.1: Real-time Mode

1. Click **Tag Inventory (Real Time Mode)**. Select the connected antenna(s) port. Set the number of **Repeat Per Command**, which is the times of repeat inventory command. For example, inventory command will execute anti-collision algorithm one time when you set the value to 1. It will execute anti-collision algorithm two times when you set the value to 2...

2. Click **Inventory**, you will find that the EPC number is uploaded immediately and it is real-time updating. The reader will keep inventory until you click **stop** as shown below:

UHF RFID Read	er Demo v3.62	ont Monitor					
Trunch and (D	and Then Wede ) The second stag less ( Section 1	ort monitor	<u></u>		1		
g Inventory(k	eal (the wode) [Tag Inventory(Buffer Mode)  Tag	Inventory(Fast	Swith Antenna Mode)  .	Access Tag			
	Stop	1	🔲 User Define Session	n Ses	sion ID: SO	▼ Inventori	ed Flag: 🔺 💌
ntenna Select	ion						
	V Ant1	🔲 Ant2	Ant3		Ant4		
g Data	Inventoried Quantity.		Sneed: (Tag/Sec)				
				1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	Tota	al Tag Communication:	
							5
			Command duratio	on(nS):			
					Tota	al Inventory Duration	(mS):
							ia -
g List: 1		Min F	RSSI: -36dBn	Ла	x RSSI: -	32dBm	Refresh
)	EPC	PC	Identification	RSSI	Carrier Fr		
	11 22 33 44	10 00	1	-35dBm	922.300		
ration Histo	ry: 📝 Auto Clear					🕅 Acti	lvate Serial Port Monito
ration Histo -08-07 14:51	ry: 🗑 Auto Clear 13 Real time mode inventory 13 Successfully set working antenna current a	orking antenna	- Apt 1			Acti	ivate Serial Port Monito
ration Histo -08-07 14:51 -08-07 14:51 -08-07 14:51	ry: ☑ Auto Clear :13 Real time mode inventory :13 Real time ande inventory :13 Real time mode inventory	forking antenna	: Ant 1			🔲 Acti	vate Serial Port Monito
ration Histo -08-07 14:51 -08-07 14:51 -08-07 14:51 -08-07 14:51 -08-07 14:51	ry: V Auto Clear 13 Real time mode inventory 13 Rouccessfully set working anterna, current w 13 Real time mode inventory 13 Real time mode inventory	forking antenna forking antenna	: Ant 1 : Ant 1			Acti	vate Serial Port Monito
ration Histo -08-07 14:51 -08-07 14:51 -08-07 14:51 -08-07 14:51 -08-07 14:51 -08-07 14:51	ry: Auto Clear 13 Real time mode inventory 13 Successfully set working antenna, current w 13 Real time mode inventory 13 Successfully set working antenna, current w 13 Real time mode inventory 14 Successfully set working antenna, current w	forking antenna forking antenna forking antenna	: Ant 1 : Ant 1 : Ant 1			Acti	ivate Serial Port Monito

Inventoried Quantity	Total number of inventory tags since click on <b>Inventory.</b>					
Speed	Speed of identification Tag, unit: piece / sec					
Total Tag Communication	Total return EPC data of tags (Including repeated data)					
Command Duration	Time of each inventory command takes, unit: ms					
Total Inventory Duration	Total elapsed time since click on Inventory, unit: ms.					
ID	The serial number of data.					
EPC	EPC number of tag.					
PC	Protocol Control word of tag.					
Identification Count	Times of tag identified.					
RSSI	The signal strength when tag was identified at the last time.					
Carrier Frequency	Carrier frequency of tag which is identified at the last time.					

# Method NO.2: Buffer Mode

1. Click **Inventory**, the screen will display as below(single tag & multi-tag inventory):

UHF RFID Reader Demo v3.62					
Reader Setup 18000-60 Tag Test ISO 18000-6B Tag Test S	erial Port Monitor				
Tag Inventory(Real Time Mode) Tag Inventory(Buffer Mode	e) Tag Inventory(Fast Swit	h Antenna Node	e) Acces	s Tag	
Stop Repeat Per Command: 1	🗸 Anti 🗌 Ant2	Mant3	i Ân	t4 Ge	et Buffer Get and Clear Buffer ear Buffer Query Tag Quantity
Tag Data		Speed(Tag/Se	a) .		
	H	Connand Dura	ntion(mS	Total	Tag Communication:
Tag List:					Refresh
ID PC CRC EPC		Ant ID	RSSI	Identification	
Operation History: 📝 Auto Clear					📃 Activate Serial Port Monitor
2014-08-07 14:55:20 Buffer mode inventory 2014-08-07 14:55:20 Successfully set working antenna, cur 2014-08-07 14:55:20 Buffer mode inventory 2014-08-07 14:55:20 Buffer mode inventory	rrent working antenna : År rrent working antenna : År rrent working antenna : År	t 1 t 1 t 1 t 1			Ē

Note: the identified tags won't be shown in the Tag list.

2. Click Stop first, then click Get Buffer. All the data in cache will be uploaded as illustrated below:

🍪 UHF	RFID Read	er Demo v	3.62					
Reader	Setup 18	000-6C Ta	g Test ISO 18000-6B Tag Test Se	rial Port Monitor				
Tag Ir	nventory(R	eal Time I	Mode) Tag Inventory(Buffer Mode	) Tag Inventory(Fast S	Swith Antenna Mod	le) Acces	s Tag	
I	[nvent	ory	Repeat Per Command: 1	🗸 Antl 🗌 Ant	t2 🔲 Ant3	An <sup>†</sup>	t4 Cle	Get and Clear Buffer Get Buffer Query Tag Quantity
Tag D	ata							
		Invento	ried Quantity:		Speed(Tag/So Command Dur	ec): ration(mS)	Total '	Tag Communication:
Tag L	ist: 1.							Refresh
ID	PC	CRC	EPC		Ant ID	RSSI	Identification	
1	10 00	36 58	11 22 33	3 44	1	-39dBa	155	
Opera	tion Histo	ry: 🔽 Au	ito Clear					Activate Serial Port Monitor
2014-08 2014-08 2014-08 2014-08 2014-08 2014-08 2014-08 2014-08 2014-08	-07 14:55 -07 14:55 -07 14:55 -07 14:55 -07 14:55 -07 14:55 -07 14:55 -07 14:55 -07 14:56	33 Buffer 33 Succes 33 Buffer 34 Succes 34 Buffer 34 Succes 34 Buffer 34 Buffer 18 Reader	node inventory sfully set working antenna, cur rade inventory sfully set working antenna, cur rade inventory usfully set working antenna, cur r ade inventory buffer	rent working antenna : rent working antenna : rent working antenna :	Ant 1 Ant 1 Ant 1			

Functions description under Buffer Mode:

**Get and Clear:** Read the data form cache and then clear the cache. It will be empty when you read the cache again.

**Query tag Quantity:** If you just want to know how many tags are there in cache without details, click on this button.

Clear Buffer: Clear the cache and refresh the screen.

# 2.4 Accessing ISO-18000-6C Tag

Click Access Tag, and the screen will display as following:

) UHI	F RFID R	eader [	Demo v3.	62										a 🗙
leader	Setup	18000-	-6C Tag	Test ISO 18000-6B 7	ag Test	Serial Port	t Monitor		$\sim$	~				
Tag I Tag i	nventor Access	y(Real	Time Mo	de)   Tag Inventory()	Buffer Mo	ode)   Tag Inv	ventory(Fas	t Swith Antenna M	ole) Acce	ss Tag				
Tag	g Selection													
Selected Tag:								▼ Select						
Read	/¥rite	Tag												
(	) Passw	ord	○ EPC	🔘 TID 🛛 USER	Acce	ess Password	(HEX):	Sta	rt Add(WO	RD):	Lengt	h(WORD):	Read	
Da	ta to b	e Writ	ten(HEX)	:									¥rite	
Lock	Tag													
(	Acces	s Passi	vord	─ Kill Password	© ef	°C	© tid	🔘 USER		Access Password(HEX):				
	0 0	pen		C Lock	🔘 Pe	rmanent Oper	n	🔘 Permanent L	ock					
Kill	Tag													
					Kill	l Password(H	EX):						Kill	
ID	PC	CRC		EPC			Data		Data	Ant ID	Operated			
Opera	tion Hi	story:	🔽 Auto	Clear								Act	ivate Serial Port M	onitor
														_

### 2.4.1 Read tags

You can set the parameter(zones to be read, Start Address and Data Length) as illustrated below:

Read/Write Tag						
Password O EPC	🔘 tid	🔘 USER	Access Password(HEX):	Start Add(WORD): 00	Length(WORD): 2	Read
Data to be Written(HEX):						Vrite

Note: the unit of Starting Address and Data Length is WORD which is 16 bit double-byte.

Click **Read** when the parameter setting is completed.

Picture as below shows that one tag has been identified successfully.

ID	PC	CRC	EPC	Data	Date	Ant ID	Operated	
1	30.00	94 65	00 00 00 00 00 00 00 00 00	94 65 30 00	4	1	1	
-								
Oper	ation Hi	story:	🖉 Auto Clear					🖾 Activate Serial Fort Bonitor
2054-0	8-07 15:	18:49 3	ead tag					······································

### 2.4.2 Write Tags

The area of Write Tag is the same as Read Tag, but you need to provide access password and information of data to be written.

Re	ad/Write Tag								
	Password	EPC	© TID	O USER	Access Password(HEX):	00 00 00 00	Start Add(WORD): 02	Length(WORD): 4	Read
	Data to be Wri	tten(HEX)	: 11 22 3	33 44 55 66	77 88				Vrite

When the operation done successfully, the screen will display as follows:

I	D PC	CRC	EPC	Data	Data	Ant ID	Operated	
1	30 0	94 65	00 00 00 00 00 00 00 00 00			1	1	
0	peration 3	listory:	📝 Auto Clear					Activate Serial Port Monitor
201	4-08-07 1	5:21:13 W	rite tag					

Note: The maximum length of one-time write is 32 Word (64 bytes, 512bits).

# 2.4.3 Lock Tags

Lock Tag					
C Access Password	🔘 Kill Password	C EPC	© TID	<ul> <li>USER</li> </ul>	Access Password(HEV), 00 00 00 00
🔘 Open	Lock	🔘 Permanent Op	pen	Permanent Lock	LOCK

A password is necessary to be provided for locking tags. When the operation is completed successfully, the screen will display as follows:

ID	PC	CRC	EPC	Data	Data	Ant ID	Operated	
1	34 00	C4 1E	30 08 33 B2 DD D9 01 40 00			1	2	
Oper	ation Hi	story:	🗸 Auto Clear					Activate Serial Port Monitor
2014-	04-03 15:	32:16 L	ock tag					

Same as Write Tags, data of identified tags will be displayed in Tag List.

## 2.4.4 Kill Tags

Kill Tag			
	Kill Password(HEX):	aa bb cc dd	Kill

Password is necessary which can not be 00 00 00 00 before Kill Tags. Therefore, to kill a tag please need change the content of password via **Write Tag Operation** first.

When tag is killed successfully, the information will display as follows:

II	PC	CRC	EPC	Data	Data	Ant ID	Operated	
1	30 00	49 2E	11 22 33 44 55 66 77 88 00			1	1	
Op	eration Hi	story:	🗸 Auto Clear					Activate Serial Port Monitor
201	-08-07 15	:30:25 K	ill tag					

# 2.4.5 Tag Selection

No matter how many tags in RF region, we just want to access EPC tags which are already identified. Now, we can use the function of **Tag Selection**(EPC matching).

1. Tag inventory in **Buffer Mode** to get all tags'EPC number.

- 2. Get tags in cache.
- 3. Access tags and choose the EPC NO. which is needed, as illustrated below:

	_	
🧉 UHF RFID Reader Demo v3.62		_ 🛛 🗾
Reader Setup 18000-6C Tag Test ISO 18000-6B Tag Test Serial Port Monitor		
Tag Inventory(Real Time Mode)   Tag Inventory(Buffer Mode)   Tag Inventory(Fast Swith Antern Tag Access	na Mode) Access Tag	
Tag Selection		
Selected Tag: Tag List:	▼ Set	lect
Read/Write Tag	E2 00 30 00 39 05 01 75 25 70 10 89	
○ Password ○ EPC ○ TID ④ USER Access Password(HEX): 00 00 00 00	E2 00 30 00 39 05 01 91 25 70 10 C9 E2 00 30 00 39 05 01 91 25 70 10 C9 E2 00 30 00 39 05 01 92 25 50 12 5F E2 00 30 00 39 05 01 92 25 50 12 5F	ead
Data to be Written(HEX): aa bb cc dd	E2 00 30 00 39 05 01 71 25 30 12 15 E2 00 30 00 39 05 01 71 25 30 12 B1 E2 00 30 00 39 05 01 42 25 40 13 26	ite
Lock Tag	E2 00 30 00 39 05 02 14 25 70 11 25	
C Access Password C Kill Password C EPC C TID 💿 USE	E2 00 30 00 39 05 01 26 25 70 0F C5 E2 00 30 00 39 05 01 70 25 30 12 E5 E2 00 30 00 39 05 01 70 25 30 12 E5	

After choosing the tag, please click **Select** and the screen will display as follows:

Í	WHF RFID Reader Demo v3.62	- • ×
	Reader Setup 18000-6C Tag Test ISO 18000-6B Tag Test Serial Port Monitor	
	Tag Inventory(Real Time Node) Tag Inventory(Buffer Node) Tag Inventory(Fast Swith Antenna Node) Access Tag	
	Tag Selection ▼ Selected Tag: E2 00 30 00 39 05 01 89 25 70 10 C1 Tag List: E2 00 30 00 39 05 01 89 25 70 10 C1 ▼	elect

We could see that the column on the left for **Selected Tag** has been selected. Next, all the operations are based on the tag with this EPC NO.

If you want to cancel the match of EPC, just deselect the column for **Selected Tag**, as below:

Tag Selection			
Selected Tag:	Tag List:	▼	Select

## 2.4.6 Error Display Might Be Returned

- Errors occur if wrong operations done:
- ♦ Inventory success, access failure:

Operation History: 📝 Auto Clear	🕅 Activate Serial Port Monitor
2014-04-10 14:37:41 Read tag failed, due to Tag Inventoried but access failed	

There are two steps to get access to tags: firstly, tag inventory; secondly, access tags. Picture above shows the inventory is successful, failed to access to tags.

Two reasons why:

- 1. Parameters incorrect: for example, zones(password/ EPC/ TID/ User) to be read do not exist.
- 2. Tags beyond the area that the RF could cover: distance of accessing to tags is about 60%-70% of tag inventory; in this case, please put the tag closer to the antenna.

/rong password:	
Operation History: 📝 Auto Clear	🗌 Activate Serial Port Monitor
2014-04-10 17:21:40 Write tag failed, due to Access failed or wrong password	

Reason why: wrong password is set.

# • No tags to be operated:

```
Operation History: 🗹 Auto Clear 🗌 Activate Serial Port Monitor
2014-04-10 17:32:52 Lock tag failed, due to There is no tag to be operated
```

Reason why: Tags beyond the area that the RF could cover.

For more information about the operation history returned, please defer to the document: **UHF RFID Reader Serial Interface Protocol V3.1**.

# 3. Develop your own RFID Application

Most functions of the reader can be operated through the demo. But in practical applications, user might need to develop their own applications. Please defer to the document: **UHF RFID Reader Serial Interface Protocol V3.1.**The reader follows the definition both of the RS - 232 and TCP / IP interface. Demo provides an important function of recording serial transmission, so that users can quickly grasp the content of communication protocol in practice. Please defer to the screenshot below and select **Activate Serial Port Monitor**, all uplink and downlink serial data will be recorded, as illustrated below:

UHF RFID Reader Demo v3.62					
Reader Setup 18000-6C Tag Test ISO 18000-6B Tag Test Serial Port Monitor					
2014-06-21 14:47:42 A0 03 01 70 EC					
2014-06-21 14:47:43 A0 03 01 70 EC					
2014-06-21 14:47:45 A0 03 01 72 EA					
2014-06-21 14:47:45 A0 05 01 72 06 09 D9					
2014-06-21 14:47:45 A0 03 01 7B E1					
2014-06-21 14:47:45 A0 05 01 7B 01 27 B7					
2014-06-21 14:47:52 A0 04 01 76 1K C7					
2014-06-21 14:47:52 A0 04 01 76 10 05					
2014-06-21 14:41:53 A0 03 01 72 1F C6					
2014-06-21 14-47-55 AO 03 01 63 F9					
2014-06-21 14:47:55 A0 04 01 63 03 F5					
2014-06-21 14:47:56 A0 03 01 79 E3					
2014-06-21 14:47:56 A0 06 01 79 01 07 3B 9D					
2014-06-21 14:47:59 A0 04 01 74 00 E7					
2014-06-21 14:47:59 A0 04 01 74 10 D7					
2014-06-21 14:47:59 A0 04 01 89 01 D1					
2014-06-21 14:47:59 A0 13 01 89 B0 30 00 00 00 00 00 00 00 00 00 00 00 00	40 00 0	0 00 00 30	9F		
2014-06-21 14:47:59 A0 09 01 89 B0 08 00 11 22 28 BA A0 13 01 89 B0 30 00 00 00 00 00 00 00 00 00 00 00 C6 28 ED A0 13 01	89 80 3	30 00 30 08	33 B2		
2014-06-21 14:44:59 DD D9 01 40 00 00 00 42 D9 A0 13 01 35 D0 30 00 30 08 35 D2 DD 9 01 40 00 00 00 02 PAU					
	27 25 3	30 11 D1 31	74		
2014-06-21 14:47:59 A0 13 01 89 38 30 00 30 08 33 B2 DD D9 01 40 00 00 00 02 C 1B A0 13 01 89 38 30 00 30 08 33 B2 DD D9 01	40 00 0	0 00 00 33	14		
2014-06-21 14:47:59 A0 13 01 89 88 30 00 30 08 33 B2 DD D9 01 40 00 00 00 32 C5 A0 13 01 89 88 30 00 00 00 00 00 00 00 00 00	0 00 00 0	00 00 CB 27	19 AO 13	01 89	88 30 00
30 08 33 B2 DD					
2014-06-21 14:47:59 D9 01 40 00 00 00 00 32 C5 A0 13 01 89 88 30 00 30 08 33 B2 DD D9 01 40 00 00 00 04 30 C3 A0 13 01 89 88	30 00 3	30 08 33 B2	DD D9 01	40 00	00 00 02
31 C4					
2014-06-21 14:47:59 A0 13 01 89 88 30 00 00 00 00 00 00 00 00 00 00 00 00					
2014-06-21 14:47:59 A0 13 01 89 58 30 00 30 08 33 B2 DD D9 01 40 00 00 00 00 2C FB					
12014-00-21 14:44:23 A0 12 01 88 24 20 00 E2 00 20 00 28 02 02 21 22 20 11 D1 21 2E A0 0A 01 88 00 00 2D 00 00 12 1C					
Input Command: Check Sum:		Ser	nd	Cle	ar
Generation Wintermer III Auto Clean		🔽 datir		1 Dent	Vanitan
operation history: W Auto Clear	· ·	M Activ	vate seria.	I Port	Monitor
2014-06-21 14:47:49 Get infimare version 2014-06-21 14:47:45 Get infimare version					<u>^</u>
2014-06-21 14:47:52 Set RF output power					
2014-06-21 14:47:53 Get RF output power					
2014-06-21 14:47:55 Get antenna connection detector sensitivity threshold					
2014-06-21 14:47:56 Get RF spectrum					-
2014-06-21 14:47:59 Successfully set working antenna, current working antenna : Ant 1					
2014-06-21 14:47:59 Keal time mode inventory					*

Notes:

1. Response speed of Demo will slow down after opening the **Activate Serial Port Monitor**. Please turn off this function when it is not needed.

2. Data in violet blue color is sent to the reader by PC, and data in red color is the returned information from reader to PC.

3.Manual **Input Command** is used to debug serial command, which could calculate the checksum automatically.

4. **UHF RFID Reader Serial Interface Protocol V3.1**, this document includes the integral source codes of the demo (Based on C # of .Net platform) to help users develop applications on the reader. Thank you!

# 4. Installing Driver

- 1. Open the D-100 Driver folder.
- 2. Double click on CDM20828\_Setup.exe, the following screen displays:



3. Click on Extract:

FTDI CDM drivers			×
Extracting Files FreeExtractor is extracting the compressed files in this arc	ive.		<b>}</b>
Please wait while the files in this archive are extracted.			
Extracting dpinst-x86.exe			_
			-
Fuer Future terr			
Freezuator	< Back	Extract	Cancel

After installation is complete, we could connect reader to PC successfully.

# **FCC Statement**

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.

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

NOTE: 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 complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 cm between the radiator and your body. This device complies with Innovation, Science, and Economic Development Canad licence-exempt RSS standard(s). Operation is subject to the following two conditions:

(1) this device may not cause interference, and

(2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence.

L'exploitation est autorisée aux deux conditions suivantes :

(1) l'appareil nedoit pas produire de brouillage, et

(2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

The device is compliance with RF exposure guidelines, users can obtain Canadian information on RF exposure and compliance. The minimum distance from body to use the device is 20cm.

Le présent appareil est conforme Après examen de ce matériel aux conformité ou aux limites d'int ensité de champ RF, les utilisateurs peuvent sur l'exposition aux radiofréquences et la conformité and compliance d'acquérir les informations correspondantes. La distance minimale du corps à utili ser le dispositif est de 20cm.