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



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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:

Serial Port: OML Connect Baxdrate: I15200 Disconnect Set Baxdrate: Read (Priot GPIO Set GPIO1: High CP/IP GPIO2: High Reader IP Add: 192, 188, 0, 178 Connect Port: 4001 Disconnect	Get
Serial Port: OML Connect Baxdrate: I15200 Disconnect Set Baxdrate: Read (Priot GPIO Set GPIO1: High CP/IP GPIO2: High Reader IP Add: 192, 188, 0, 178 Connect Port: 4001 Disconnect	Get
Bandrate: II5200 Disconnect Read/Write GP10 Set Bandrate: • Set GP101: High Low CP/IP Reader IP Add: 192, 168, 0, 178 Connect Write GP10 Write GP10 Port: 4001 Disconnect Write GP10 Write GP10 Write GP10	Get
Set GP101: High Low CP/IP GP102: High Low Reader IP Add: 192. 188. 0. 178 Connect Write GP10 Port: 4001 Disconnect Write GP10	
CCP/IP 0 1 101. 0 102. 0 0 101. 0 102. Reader IP Add: 192. 168. 0. 178 Connect GPI02: 0 High © Low Port: 4001 Disconnect Write GPI0 Reider GPI0	
Reader IP Add: 192, 168, 0, 178 Connect Port: 4001 Disconnect Write GP10	
Part: 4001 Disconnect	Read
GPI03: ○ High ○ Low	Write GPI03
RS-485 Address(HEX) GPI04: OHigh O Low	Write GPIO4
Reader Identifier(12 Bytes)	
Get 🔘 Quiet	
© Beep after an inventory round	
Set 💮 Beep 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
	© TCP/IP		6.9		Get
-232		Internal Temperature			
Serial Port: CON5 💌	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
		Write GPIO			
Port: 4001	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 4-02 15:06:45 Get firmware version	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 1	Frequencies							
	FCC	🔘 ETSI	CHN	Freq Range:	▼ MHz	-	▼ MHz		
								Get	Set
	User Defined Fr	equencies							
🔲 User Define	Start Frequ	iency:	KHz	Freq Space:	KHz Qu	antity:			

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								
Tag Inventory (Real Time Mode) Tag Inventory (Buffer Mode) Tag Inven	tory(Fast Swith Antenna Mode) Access 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:

	8000-6C Tag Test ISO 18000-6B Tag					_			
fag Inventory(Real Time Mode) Tag Inventory(Buf:	fer Mode) Tag Inver	ntory(Fast S	with Antenna Mode) A	ccess Tag				
	Stop epeat Pe	er Command: 1]User Define Session	Ses	ssion ID: (S0 🔻	Inventoried Fl	ag: 🔺 🔻
Antenna Selec	tion								
		🗸 Ant1	🔲 Ånt2	📃 Ant3		🔲 Ant4			
m n.									
Tag Data	Inventoried Quantity:			Speed:(Tag/Sec):					
						Т	otal Tag Com	munication:	
				Command duration	(1.5)				
					1(113).	Т	otal Invento	ory Duration(mS):	
					55			115	
Tag List: 1			Min RS	SI: -36dBn	Na	x RSSI:	-32dBm		Refresh
ID	EPC		PC	Identification	RSSI	Carrier Fi	r		
						000.001	n		
1	11 22 33 44		10 00	1	-35dBm	922.300	5		
1	11 22 33 44		10 00	1	-35dBm	922.300	,		
1	11 22 33 44		10 00	1	-35dBm	922.300	, ,		
1	11 22 33 44		10 00	1	-35dBm	922.300			
1	11 22 33 44		10 00	1	-35dBm	922. 300			
1	11 22 33 44		10 00	1	-35dBm	922. 30			
1	11 22 33 44		10 00	1	-35dBn	922.300			
1	11 22 33 44		10 00	1	-35dBn	922.300			
1	11 22 33 44		10 00	1	-35dBm	922. 300			
			10 00	1	-35dBn	922. 300	J	Activate	Serial Port Monit
Dperation Hist	ory: 📝 Auto Clear		10 00	1	-35dBm	922. 300		Activate	Serial Port Monito
- Dperation Hist 14-08-07 14:5	ory: 📝 Auto Clear 1:13 Real time mode inventory	nna. current vorkin			-35dBm	922. 300		Activate	Serial Port Monito
Dperation Hist 14-08-07 14:5 14-08-07 14:5	ory: ☑ Auto Clear 1:13 Real time mode inventory 1:13 Real time mode inventory		g antenna :	Ant 1	-35dBm	922.300		Activate	Serial Port Monito
Dperation Hist 14-08-07 14:5 14-08-07 14:5 14-08-07 14:5	ory: V Auto Clear 1:13 Real time mode inventory 1:13 Successfully set working ante 1:13 Real time mode inventory 1:13 Successfully set working ante		g antenna :	Ant 1	-35dBm	922.300		Activate	Serial Port Monito
Operation Hist 014-08-07 14:5 014-08-07 14:5 014-08-07 14:5 014-08-07 14:5	ory: ☑ Auto Clear 1:13 Real time acde inventory 1:13 Successfully set working ante 1:13 Real time acde inventory 1:13 Real time acde inventory	nna, current workin	g antenna : g antenna :	Ant 1 Ant 1	-35dBm	922.300		🗌 Activate	Serial Port Monito
Operation Hist 014-08-07 14:5 014-08-07 14:5 014-08-07 14:5 014-08-07 14:5 014-08-07 14:5	ory: V Auto Clear 1:13 Real time mode inventory 1:13 Successfully set working ante 1:13 Real time mode inventory 1:13 Successfully set working ante	nna, current workin nna, current workin	g antenna : g antenna : g antenna :	Ant 1 Ant 1 Ant 1 Ant 1	-35dBm	922.300		Activate	Serial Port Monito

Inventoried Quantity	Total number of inventory tags since click on Inventory.					
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):

r			
(Fast Swith Antenna Mo	de) Acces	s Tag	
🗌 Ant2 📄 Ant3	i Ân	t4	et Buffer Get and Clear Buffer ear Buffer Query Tag Quantity
Current (Torn /			
		ö 88	Tag Communication:
			Refresh
Ant ID	RSSI	Identification	
			Activate Serial Port Monitor
eenna : Ant 1 eenna : Ant 1			
	Ant 2 Ant 3	(Fast Swith Antenna Node) Access Ant2 Ant3 An Speed(Tag/Sec): Connand Duration(nS) Connand Duration(nS) Connand Duration(nS) Ant ID RSSI Ant ID RSSI Interval Interval Ant ID RSSI Interval Interval Interval <t< td=""><td>Fast Swith Antenna Node) Access Tag Ant2 Ant3 Ant4 Class Class Speed(Tag/Sec): Total Consand Duration(aS): Total Ant ID RSSI Identification Ant ID RSSI Identification Image: Ant ID Image: Ant I</td></t<>	Fast Swith Antenna Node) Access Tag Ant2 Ant3 Ant4 Class Class Speed(Tag/Sec): Total Consand Duration(aS): Total Ant ID RSSI Identification Ant ID RSSI Identification Image: Ant ID Image: Ant I

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	🗸 Åntl 📃 Ånt	t2 🔲 Ant3	- An	t4	Get and Clear Buffer Get Buffer Query Tag Quantity
Tag D	ata							
		Invento	ried Quantity:		Speed(Tag/So Command Dur			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	-39dBn	165	
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	8-07 14:55 8-07 14:55 8-07 14:55 8-07 14:55 8-07 14:55	33 Succes 33 Buffer 34 Succes 34 Buffer 34 Succes 34 Buffer	<pre>c node inventory ssfully set working antenna, cur r node inventory ssfully set working antenna, cur r node inventory ssfully set working antenna, cur r node inventory b buffer</pre>	rent working antenna :	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:

			Demo v3.											• ×
leader	: Setup	18000-	-6C Tag	Test ISO 18000-6B 7	ag Test	Serial Port	t Monitor		\sim	~				
	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	Selecti	on												
	Selecte	ed Tag:						Tag List:					▼ 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		Acces	s Password(HEX)	:	Lock	
	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:	🔽 åuto	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	● EPC	🔘 tid	🔘 USER	Access Password(HEX):	Start Add(WORD): 00	Length(WORD): 2	Read
Data to be Wri	tten(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.

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:

ID	PC	CRC	EPC	Data	Data	Ant ID	Operated	
1	30 00	94 65	00 00 00 00 00 00 00 00 00			1	1	
Opera	tion Hi	story:	🔽 Auto Clear					🔲 Activate Serial Port Monitor
014-0	8-07 15:	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	 USER 	Access Password(HEX): 00 00 00 00 Lock
🔘 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
014-U	4-03 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:

ID	PC	CRC	EPC	Data	Data	Ant ID	Operated	
1	30 00	49 2E	11 22 33 44 55 66 77 88 00			1	1	
Opera	ation Hi	story:	📝 Auto Clear					🔲 Activate Serial Port Monitor
014-0	8-07 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) Ta Tag Access	g Inventory(Fast Swith Ante	nna Mode) Access Tag	
Tag Selection			
Selected Tag:	Tag List:	E2 00 30 00 39 05 00 76 25 60 14 30	- Select
Read/Write Tag		E2 00 30 00 39 05 01 75 25 70 10 89	^
○ Password ○ EPC ○ TID ● USER Access Pass	sword(HEX): 00 00 00 00	E2 00 30 00 39 05 02 18 25 50 11 F7 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 02 09 25 50 12 1B	Read
Data to be Written(HEX): aa bb cc dd		E2 00 30 00 39 05 01 71 25 30 12 B1 E2 00 30 00 39 05 01 42 25 40 13 26 E2 00 30 00 39 05 01 67 25 40 12 C2	Write
Lock Tag		E2 00 30 00 39 05 02 14 25 70 11 25 E2 00 30 00 39 05 01 89 25 70 10 C1	
C Access Password C Kill Password C EPC	🔘 TID 💿 U	BE E2 00 30 03 05 01 26 25 70 0F C5 BE E2 00 30 00 39 05 01 70 25 30 12 E5 F2 00 30 03 95 01 70 25 30 12 E5 F2 00 30 03 93 05 21 24 25 01 11 E7	

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 1014-06-21 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 1E C7	
014-06-21 14:47:52 A0 04 01 76 10 C1 014-06-21 14:47:52 A0 04 01 76 10 D5 014-06-21 14:47:53 A0 03 01 77 E5	
014-06-21 14:47:53 A0 04 01 77 IE C6 014-06-21 14:47:55 A0 03 01 63 F9	
2014-06-21 14:47:55 AO 04 01 63 03 F5 2014-06-21 14:47:56 AO 03 01 79 E3	
2014-06-21 14:47:55 A0 06 01 79 01 07 38 9D 2014-06-21 14:47:59 A0 04 01 74 00 E7 014-06-21 14:47:59 A0 04 01 74 10 D7	
0014-06-21 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 BC 58 CF A0 13 01 89 B0 30	30 00 30 08 33 B2 DD D9 01 40 00 00 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 00	00 00 00 CB 2B ED A0 13 01 89 B0 30 00 30 08 33 B2
2014-06-21 14:47:59 A0 13 01 89 88 30 00 30 08 33 B2 DD D9 01 40 00 00 00 02 31 C4 2014-06-21 14:47:59 A0 13 01 89 38 30 00 30 08 33 B2 DD D9 01 40 00 00 00 00 26 21 A0 13 01 89 38 30 40 40 62 14:47:50 A0 13 01 89 38 30 00 30 08 33 B2 DD D9 01 40 00 00 00 00 26 21 A0 13 01 89 38 30	
2014-06-21 14:47:59 A0 13 01 89 38 30 00 30 08 33 B2 DD D9 01 40 00 00 00 00 2C 1B A0 13 01 89 38 30 2014-06-21 14:47:59 A0 13 01 89 88 30 00 30 08 33 B2 DD D9 01 40 00 00 00 00 32 C5 A0 13 01 89 88 30 00 89 38 B2 DD	
014-06-21 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 N1 C4	00 04 30 C3 A0 13 01 89 88 30 00 30 08 33 B2 DD D9 01 40 00 00 00 02
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 54 30 00 E2 00 30 00 39 05 02 27 25 30 11 D1 31 5E A0 0A 01 89 00 00	00 3D 00 00 00 13 7C
Input Command:	Check Sum: Send Clear
Operation History: W Auto Clear	🖉 Activate Serial Port Monitor
014-06-21 14:47:45 Get firmware version 014-06-21 14:47:45 Get internal temperature 014-06-21 14:47:52 Set KF output power	
014-06-21 14:47:53 Get RF output power 014-06-21 14:47:55 Get antenna connection detector sensitivity threshold	
014-06-21 14:47:56 Get RF spectrum 014-06-21 14:47:59 Successfully set working antenna, current working antenna : Ant 1 014-06-21 14:47:59 Real time mode inventory	
Si So Zi 13.3.00 Near 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	hive.	۲	4
Please wait while the files in this archive are extracted.			
Extracting dpinst-x86.exe			
FreeExtractor			
	< Back	Extract	ancel

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.