File : D-100 Desktop reader

Version : V1.1



D-100 Desktop reader

User guide



AXEM Technology



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1 D-10X View





1-1: Front View



1-2: Back View



1-3: Plan View

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2 Packing list

The D100 box must contain: UHF reader D-100

1 cable USB





1 GPIO adaptor



3 Initial Use

3.1 Step 1: Connect the reader to PC via USB or Serial Port

3.1.1 Method NO.1: connection via USB

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:



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3.1.2 Method NO.2: connection via RS-232

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 turns on and a short beep sounds, the player is ready.

Note: The driver will be installed automatically when the reader is connected to the PC for the first time. But some computers can fail. In this case, please install the driver manually. (see: Driver installation on page 21).

3.1.3 Step 2: 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 be displayed as follows:

File : D-100 Desktop reader

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c Setup RF Set	up			
nnection	• RS232	TCP/IP	Firmware Version	Get
-232			Internal Temperature	
Serial Port:	COM1 -	Connect		Get
Baudrate:	115200 👻	Disconnect	Read/Write GPIO Read GPIO	
Set Baudrate:		Set	GPI01: 🗇 High 💿 Low	
P/IP Reader IP Add:	192 168 0 178	Connect	GPI02: 🔘 High 🛞 Low	Read
Port:	4001	Disconnect	Write GPIO	
-485 Address(Hi			GP103: O High O Low	Write GPI03
		Set	GPI04: OHigh OLow	Write GPI04
ader Identifie	r(12 Bytes)		Buzzer Behavior	
		Get	© Quiet	
		Cat	© Beep after an inventory round	()
		Jet	Beep after a tag is identified. (For test only)	Set
	Reset Reader			Refresh
tion History:	🛛 Auto Clear		Act	ivate Serial Port M

2. Select RS232 as Connection if the reader is connected via the RS-232 port, or select USB as Connection if the reader is connected via USB. Choose the serial port and the corresponding baud rate (the default baud rate is 115200) as shown below:

		TCP/IP
S-232		
Serial Port:	COM1	▼ Connec
Baudrate.	115200	• Disconne

3. Click Connect, if it succeeds, the Operation History will be shown as below:



Text communication with the reader:
 Click on Get in Firmware Version or in Reader Identifier. The following screen displays:

File : D-100 Desktop reader

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ann a still an			Firmuna Vera	-		
	RS232	TCP/IP	TITIMALC VCIS	6. 9		Get
RS-232			Internal Temp	erature		\smile
Serial Port:	CON5 -	Connect				Get
Baudrate:	115200 -	Disconnect	Read/Write GP Read GPIO	0		
Set Baudrate:	•	Set		GPIO1: 🔘 High	© Low	
TCP/IP				GPIO2: 🔘 High	© Low	Read
Reader IP Add:	192 . 168 . 0 . 178	Connect	Write GPIO			
Port:	4001	Disconnect		GPIO3: 🔘 High	C Low	Write GPI03
RS-485 Address(H	(X)				0	
	01	Set		GPI04: 🔘 High	C Low	Write GPI04
Reader Identifie:	(12 Bytes)		Buzzer Behavi	or		
FF FF FF FF	FF FF FF FF FF FF FF FF	F Get	O	Quiet		
			0	Beep after an invent	ry round	
		Set	0	Beep after a tag is :	dentified.(For test only)	Set
	Reset Read	er				Refresh
eration History:	🔽 Auto Clear				Ac	tivate Serial Port M
1-04-02 15:06:42	Reader connected CON501	15200				

The reader has been successfully connected to PC.

3.2 Setting RF Parameter

After connecting the reader with PC, some basic RF parameters need to be configured: RF Output Power & RF Spectrum. To do so, select **RF Setup** as illustrated below:

t Monitor
-

3.2.1 Setting RF Output Power

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

RF Output Pow	er			
	26	dBm	Get	Set

The output power range is from 18 to 26dBm. When this setting is complete, it is automatically saved in the reader, even if the power is turned off. The default output power is 26 dBm.



3.2.2 Setting RF Spectrum

The RF spectrum must be configured manually.

- For more information on carrier frequency, refer to the frequency parameter tablet in the communication protocol.
- Frequency range supported by the reader: 865MHz-868MHz (ETSI), 902MHz -928MHz(FCC). You can set the player in RF Spectrum Configuration->User Definition, as shown below:

	System Default	Frequencies							
	© FCC	🔘 ETSI	O CHN	Freq Range:	• MHz	-	▼ MHz		
	User Defined Fr	requencies						Get	Set
🔲 User Define	Start Freq	uency:	KHz	Freq Space:	KHz (Quantity:			

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

3.3 ISO-18000-6C tag inventory

Connect the Reader. The Tag operation can be started when the RF setup is complete.

The Tag inventory means that the reader identifies several tags' 'EPC number' at the same time. This is the central function of the UHF RFID reader and one of the standards for judging the performance of a reader.

3.3.1 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 mode is **Buffer Mode.** Data is cached and downloaded for viewing if necessary. In this mode, the data is not downloaded several times. However, data filtering takes some time for the reader. As a result, its identification efficiency will be slightly lower than that of the real-time mode. Note: tags cannot be used when you extract data from the cache.

Users can choose the appropriate method depending on their application, as shown below:

😺 UHF RFID F	leader Demo v3.62					
Reader Setup	18000-6C Tag Test 1SO 1	.8000-6B Tag Test Serial Port Monit	tor			
Tag Inventory	(Real Time Mode) Tag In	nventory(Buffer Mode) Tag Inventory	y(Fast Swith Antenna Mode) Acces	s Tag		
	Inventory	Repeat Per Command 1	🔲 User Define Session	Session ID: 80 💌	Inventoried Flag	•



3.3.1.1 Real-time Mode

- 1. Click Tag Inventory (Real Time Mode). Select the connected antenna(s) ports. 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 Re	eader Demo v3.62						_ 0 <mark>×</mark>
Reader Setup	18000-6C Tag Test ISO 18000-6B Tag Test Serial Port	Monitor					
Tag Inventory	v(Real Time Mode) Tag Inventory(Buffer Mode) Tag Inve	entory(Fast S	with Antenna Mode) A	Access Tag			
	Stop epeat Per Command: 1]User Define Session	ı Ses	sion ID: SO	▼ Inventoried Fla	g: 🔺 🔻
Antenna Sele	ection						1
	🔽 Antl	Ant2	E Ant3		Mnt4		
Tag Data							
	Inventoried Quantity:		Speed:(Tag/Sec):				
					Tot	al Tag Communication:	
			Command duratio	n(mS):	Tot	al Inventory Duration(mS):	
				1			
Tag List: 1		Min RS:	SI: -36dBm	Na	x RSSI: -	-32dBm	Refresh
ID	EPC	PC	Identification	RSSI	Carrier Fr		
1	11 22 33 44	10 00	1	-35dBn	922.300		
Operation His	story: 🗹 Auto Clear					Activate	Serial Port Monitor
2014-08-07 14: 2014-08-07 14:	51:13 Real time mode inventory 51:13 Successfully set working antenna, current worki	ng antenna :	Ant 1				^
2014-08-07 14:	51:13 Real time mode inventory	ng ontonno i	int 1				
2014-08-07 14:	51:13 Successfully set working antenna, current worki 51:13 Real time mode inventory	ing antenna .	AIIC I				
2014-08-07 14: 2014-08-07 14:	51:14 Successfully set working antenna, current worki 51:14 Real time mode inventory	ng antenna :	Ant 1				=
2014-08-07 14:	51:14 Successfully set working antenna, current worki	ng antenna :	Ant 1				*

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.

3.3.1.2 Buffer Mode

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

UHF RFID Rea	der Demo v3.62	10000 CD T								
ader Setup 1	Real Time Mode) Tag	Inventory(Buffer Mode	Tag Inventory(F)	act Cwith	Antenna Mode		e Tag			
Sto	p Repeat 1	Per Connand: 1	Ant1	Ant2	Ant3	Ant	:4	Get Buffer Lear Buffer	Get and Clear Bu Query Tag Quan	uffer tity
ag Data										
	Inventoried Quant	ity:			Speed(Tag/See Command Dura	z): tion(mS)	Total	Tag Communicati Inventory Durat	on: ion(nS):	
`ag List:									Re	fresh
D PC	CRC	EPC			Ant ID	RSSI	Identification			
peration Higt	oru: 🔽 Auto Clear								Activate Serial Por	t Wonit.
4-08-07 14:5 4-08-07 14:5 4-08-07 14:5 4-08-07 14:5 4-08-07 14:5 4-08-07 14:5	5:20 Buffer mode inv 5:20 Successfully se 5:20 Buffer mode inv 5:20 Successfully se 5:20 Buffer mode inv 5:20 Successfully se	entory t working antenna, cur entory t working antenna, cur entory t working antenna, cur	rent working anter rent working anter rent working anter	nna : Ant nna : Ant nna : Ant	1 1 1				ACTIVATE SEFIAI FOR	
014-08-07 14:5 014-08-07 14:5	5:20 Buffer mode inv 5:20 Successfully se	entory t working antenna, cur	rent working anter	nna : Ant	1					

Note: the identified tags will not 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 Reader	RFID Read	er Demo v 000–6C Tag	3.62 Test ISO 18000-6B Tag Test S	erial Port Monitor	,				
Tag In	ventory(R	eal Tine N	ode) Tag Inventory(Buffer Mode	e) Tag Inventory(F	ast Swit	h Antenna Mod	e) Acces	s Tag	
Ι	nvent	ory	Repeat Per Command: 1	🔽 Antl	Ant2	🛄 ånt3	🥅 Ant	4 Gi	et Buffer Get and Clear Buffer ear Buffer Query Tag Quantity
Tag Di	ata	Inventor	ried Quantity:			Speed(Tag/Se Command Dur	ec): ation(mS)	Total	Tag Communication:
Tag L	ist: 1								Refresh
ID 1	PC 10 00	CRC 36 58	EPC 11 22 3	3 44		Ant ID 1	RSSI -39dBn	Identification 155	
Operat 014-08	ion Histo -07 14:55	ry: 🔽 Au 33 Buffer	to Clear mode inventory						Activate Serial Port Monito:
14-08 14-08 14-08 14-08 14-08 14-08 14-08 014-08 014-08	-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 Succes 33 Buffer 34 Succes 34 Buffer 34 Succes 34 Buffer 18 Reader	sfully set working antenna, cum mode inventory sfully set working antenna, cum mode inventory sfully set working antenna, cum mode inventory buffer	rrent working ante rrent working ante rrent working ante	nna : An† nna : An† nna : An†	t 1 t 1 t 1			

Descriptions of functions under Buffer Mode:

- **Get and Clear:** read the cache of the data form, then clear the cache. It will be empty when you read the cache again.
- Query tag Quantity: to know only the number of tags in the cache, click on this button.
- Clear Buffer: clear the cache and refresh the screen.

3.4 Accessing ISO-18000-6C Tag

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



eader Setup 19000-6C Tag Test ISO 18000-6E Tag Test Serial Port Monitor se Inventory(Real Time Mode) Tag Inventory(Baffer Mode) Tag Inventory(Fast Swith Anterna Mode) Access Tag Tag Access Tag Selection Selected Tag: Tag List: Tag List: Start Add(WORD): Length(WORD): Read Data to be Written(GEX): Frite Lock Tag Access Password © Kill Password © EFC © TID © USER Access Password(HEX): Lock Kill Tag Kill Password(HEX): Kill Password(HEX): Kill Password(HEX): Access Password(HEX): Kill Password(HEX): Access Password(HEX): Access Password(HEX): Access Password(HEX): Access Password(HEX): Kill Tag Kill Password(HEX): Access Password(HEX): Kill Password(HEX): Access Password(HEX): Kill Password(HEX): Access Password(HEX): Access Password(HEX): Kill Password(HEX): Access Password(HEX): A	UHF RFID Rea	der Demo v	3.62								
ag Inventory(Real Time Mode) Tag Inventory(Buffer Mode) Tag Inventory(Fast Swith Anterna Mode) Access Tag Tag Selected Tag Selected Tag: Password BFC TID USER Access Password(HEX): Data to be Written(HEX): Lock Tag Access Password KIII Password BFC TID USER Access Password(HEX): D FC CRC EFC Data Data Ant ID Operated peration History: Auto Clear Access Password (HEX): Access Password (HEX): Access Password(HEX): Acces	ader Setup 18	8000-6C Tag	Test ISO 18000-6B Ta	ag Test Serial	. Port Monitor		\sim	_			
Tag Salection selected Tag: Tag List: Password BFC TID USER Access Password(HEX): Tag List: Password BFC TID USER Access Password(HEX): Tat to be #ritten(HEX): Access Password Kill Password BFC TID USER Access Password (HEX): Lock Tag Access Password (HEX): D CRC EFC Data Data Ant ID Operated Pr CRC EFC Data Data Ant ID Operated Access Password (HEX): Kill Access Password (HEX): Kill Password (HEX): Access Password (HEX): Cock Tag Cock Tag	ng Inventory()	Real Time W	ode) Tag Inventory(B	uffer Mode) Ta	ag Inventory(Fast	: Swith Antenna Mo	te) Acces	s Tag			
Tag Election Selected Tag: Tag List: Selected Tag: Selecte	ag Access				-		-	\sim			
Selected Tag: Tag List: Password EPC Password EPC TID USER Access Password (HEX): Variee Open Lock Permanent Open CRC EPC D PC PC Pata to be Written(HEX): Varie Pata to be Written(HEX): Permanent Open Permanent Open Permanent Open Permanent Open Permanent Open Permanent Open Permanent Open Permanent Open <th>Tag Selection</th> <th></th>	Tag Selection										
Read/Write Tag Data to be Written(HEX): Lock Tag Open Lock Permanent Open Permanent Open Rill Password(HEX): Kill P	Selected	Tag:				Tag List:				•	Select
Passvord EFC TID USER Access Password (HEX): Start Add(WORD): Length(WORD): Read Data to be Written(HEX): Lock TID USER Access Password(HEX): Lock Open Lock Permanent Open Permanent Lock Kill Password(HEX): Lock Permanent Open Permanent Lock Kill Password(HEX): Lock Fermanent Open PC CRC EPC Data Data D PC CRC EPC Data Data Ant ID Operated Permation History: V Auto Clear	Read/¥rite Ta	g									
Data to be Vritten(HEX): Vrite Lock Tag	C Password	i 🔘 EPC	🔘 TID 🛛 USER	Access Pas	sword(HEX):	Star	t Add(WOR	D):	Length(WOR	D):	Read
Lock Tag Access Password K111 Password Open Lock K111 Tag K111 Password(HEX):	Data to be '	Fritten(HEX):								Vrite
Access Password K111 Password EPC TID USER Access Password(HEX): Lock © Open Lock Permanent Open Permanent Lock K111 K111 K111 Tas K111 Password(HEX): K111 K111 D PC CRC EPC Data Data Ant ID Operated D PC CRC EPC Data Data Ant ID Operated P I I I I IIII IIII I I IIII IIII IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	Lock Tag										
Open Lock Kill Tas Kill Password(HEX): D FC CRC PC CRC EPC Data Data Data Data Data PC CRC EPC Data Data Data Data Data Pata Data	C Access I	assword	🔘 Kill Password	© EPC	© TID	O USER		Acces	s Password(HEX):		Lock
Kill Tag Kill Password(HEX): Kill D FC CRC EFC Data Data Ant ID Operated D FC CRC EFC Data Data Ant ID Operated D FC CRC EFC Data Data Ant ID Operated D FC CRC EFC Data Data Ant ID Operated D FC CRC EFC Data Data Ant ID Operated D FC CRC EFC Data Data Ant ID Operated D FC CRC EFC Data Data Ant ID Operated D FC FC Data Data Ant ID Operated D FC FC Data Data FC D FC FC FC FC FC D FC FC FC<	🔘 Oper	ı	C Lock	🔘 Permanent	: Open	🔘 Permanent Lo	ck				[]
Kill Password(HEX): Kill D PC CRC EFC Data Data Ant ID Operated D PC CRC EFC Data Data Ant ID Operated D PC CRC EFC Data Data Ant ID Operated D Image: CRC Image: CRC <td>Kill Tag</td> <td></td>	Kill Tag										
D FC CRC EFC Data Data Ant ID Operated I <tdi< td=""> I</tdi<>				Kill Passw	ord(HEX):						Kill
peration History: V Auto Clear	D PC	CRC	EPC		Data		Data	Ant ID	Operated		
peration History: 🖉 Auto Clear											
peration History: 🖉 Auto Clear											
peration History: 🖉 Auto Clear											
peration History: 🖉 Auto Clear											
peration History: 🖉 Auto Clear											
peration History: 🖉 Auto Clear											
Deration History: 🖉 Auto Clear											
peration History: 🖉 Auto Clear 📃 Activate Serial Port No.											
peration History: 🔽 Auto Clear 📃 Activate Serial Port Mo											
	neration Hist	oru: 🔽 Au	to Clear							Activate	Serial Port Monit
		•••)•									

3.4.1 Read tags

Parameters can be configured (zones to be read, Start Address and Data Length) as below:

Password	●[EPC]	🔘 TID	O USER	Access Password(HEX):	Start Add(WORD): 00	Length(WORD): 2	Read
	++op(UEV)						Waster

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 1 30	00	CBC 94 65	EPC 00 00 00 00 00 00 00 00 00	Data 94.65 30.00	Date 6	Ant ID	Operated	
Operation 2054-08-07	15:1	tary: 8:49 B	Ø Auto Clear ead tag					Activate Serial Fort Boniter

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File	;	D-	100	Desktop	reader
------	---	----	-----	---------	--------



3.4.2 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.

Password	EPC	© tid	O USER	Access Password(HEX):	00 00 00 00	Start Add(WORD):	02	Length(WORD): 4	Read
ata to be Wri	tter (NEV)	. 11 22 :	33 44 55 66	77 88					Vinites

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	
Oper	ation Hi	story:	🗸 Auto Clear					🔲 Activate Serial Port Monitor
2014-0	08-07 15:	21:13 W	rite tag					

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

3.4.3 Lock Tags

L	ock Tag							
	🔿 Access Password	🔘 Kill Password	© epc	TID	USER	Access December 4 (UDV)	00.00.00.00	
	🔘 Open	Lock	Permanent	Open	🔘 Permanent Lock	Access Fassworu(nEA):	00 00 00 00	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
2014-0	04-03 15:	32:16 L	ock tag					

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

File : D-100 Desktop reader	
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3.4.4 Kill Tags	

To kill a tag, a password other than 00 00 00 00 00 00 00 00 00 00 00 must be configured. Therefore, to kill a tag, you must first change the content of the password via the Write Tag operation.

Kill Kill

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

Kill Password(HEX): aa bb cc dd

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	
Oper	ation Hi	story:	🗸 Auto Clear					🗌 Activate Serial Port Monitor
2014-	08-07 15:	30:25 K	ill tag					

3.4.5 Tag Selection

In order to access the EPCs of the tags already identified, it is necessary to use the Tag Selection function (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 Antenr	a Node) Access Tag	
Tag Access		
Tag Selection		
Selected Tag: Tag List:		Select
Read/¥rite Tag	E2 00 30 00 39 05 00 76 25 60 14 30 E2 00 30 00 39 05 01 75 25 70 10 89	
Password O EPC O TID O USER Access Password(HEX): 00 00 00 00	E2 00 30 00 39 05 01 91 25 50 11 F7 E2 00 30 00 39 05 01 91 25 70 10 C9 F2 00 30 00 39 05 01 91 25 70 12 5F	Read
	E2 00 30 00 39 05 02 09 25 50 12 1B E2 00 30 00 39 05 01 71 25 30 12 B	
Data to be Written(HEX): aa bb cc dd	E2 00 30 00 39 05 01 42 25 40 13 26 E2 00 30 00 39 05 01 67 25 40 12 C2	Vrite
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	
© Access Password 💿 Kill Password 💿 EPC 💿 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 B5	
	F7 00 30 00 30 05 07 34 75 50 11 F7	Y 1

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

🔮 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(Fas Tag Access	t Swith Antenna Node) Access Tag
Tag Selection V 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

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.

To cancel the match of EPC, deselect the column for **Selected Tag**, as below:

Tag Selection

Selected Tag:

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3.4.6 Error Display

Errors occur if incorrect operations are performed:

• Inventory success, access failure:

Operation History: 📝 Auto Clear	🗌 Activate Serial Port Monitor		
014-04-10 14:37:41 Read tag failed, due to Tag Inventoried but access failed			

Tag List:

La capture d'écran montre 1) inventaire réussi mais 2) échec d'accès aux tags

The reasons to this error could be the following:

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

• Wrong password:



In this case, wrong password has been set.

• No tags to be operated:



This error is since the tags are beyond the area that the RF covers.



4 Develop your own RFID Application

Most functions of the reader can be operated through the demo. To develop your own application, refer to the document **Commands Definition**. 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		X
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 18 C7		
2014-00-21 14:41:52 A0 04 01 r6 10 D5		
2014-06-21 14.47.55 A0 04 01 11 25		
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 AO 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 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 CB 2B ED A0 13 01 89 B0 30 00 30 08 33 B2		
2014-06-21 14:47:59 DD D9 01 40 00 00 00 04 2D 9E A0 13 01 89 B0 30 00 30 08 33 B2 DD D9 01 40 00 00 00 2F A0		
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 02 6 21 A0 13 01 89 38 30 00 E2 00 30 00 39 05 02 27 25 30 11 D1 31 7A		
2014-06-21 14:47:55 A0 13 01 89 38 30 00 30 08 33 B2 DD D9 01 40 00 00 00 00 02 CT BA0 13 01 89 38 30 00 30 08 33 B2 DD D9 01 40 00 00 00 00 33 14		
2014-06-22 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 00 C6 27 19 A0 13 01	39 88 3	30 00
	00 00 1	00.02
21 CM	00 00 0	JU 02
01 0-1 01 4-06-21 14-47-59 AD 13 D1 29 28 30 DD RC 59 F6		
D11-06-21 11:4:47:59 H0 13 01 89 58 30 00 30 08 33 B2 DD D9 01 40 00 00 02 CFB		
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 3D 00 00 13 7C		
		_
Input Command: Check Sum: Send	lear	
		_
Operation History: 🗹 Auto Clear 🔍 Activate Serial Po	rt Mon	itor
2014-06-21 14:47:45 Get firmware version		•
2014-06-21 14:47:45 Get internal temperature		
2014-06-21 14:47:52 Set R ^a output power		
2014-00-21 14:41:05 Get Kr output power		
Solt of 21 11.11.00 Get antenna connection detector sensitivity threshold		=
014-06-21 11-11-00 GUT a spectra a		
2014-06-21 14:47:59 Real time mode inventory		
		Ψ.

Notes:

- Response speed of Demo will slow down after opening the **Activate Serial Port Monitor**. Please turn off this function when it is not needed.
- 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.
- Manual **Input Command** is used to debug serial command, which could calculate the checksum automatically.

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5 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 ar	chive.		*
Please wait while the files in this archive are extracted.			•
Extraction doinst-v86 eve			
Extracting opinist-xoolexe			
eeExtractor			
States at Maran	///	1	(

After installation is complete, the reader is successfully connected to PC.



6 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.

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