marson

MR10A7 Mobile NFC Reader

User's Manual

V 2.0

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1. Introduction

The MR10A7 is a Wireless NFC Reader that uses Bluetooth as the communication interface. It can quickly connect with computers, mobile phones, tablets, etc. through the Human Interface Device (HID), without installing additional device drivers, and can complete an array of operations by integrating its Apps with the Cloud. With a streamlined contemporary styling and a fresh, simple, two colour design, it is ergonomic and easily fits in one hand. With an IP55 dust and water protection rating and a 1.5 meter fall-protection rating, it is also suitable for prolonged use outdoors and in various harsh environments. The MR10A7 has a 1000mAh internal battery and 2MB of internal memory, enough for 10,000 online/offline scans. It can also read from the entire lineup of high frequency RFID NFC chips (ISO14443A, ISO14443B, ISO15693), including wireless key cards, debit cards, and the commonly seen EasyCard.

1-1. Product Features

Light and Easy to Carry

Using Bluetooth as the communication interface, the MR10A7 avoids wiring limitations and enables users to transfer and sync data without changing their work style. Weighing in at just 70g, the product is easily held in one hand and is shaped ergonomically.

Novel Exterior Design

The two-colour exterior design is fresh, simple and clean. The unibody plastic shell is curved, fashionably shaped, and in harmony with mobile phones and tablet usage.

Industry Level Protection

The MR10A7 is an RFID Wireless Reader featuring IP55 dust and water protection rating and a 1.5 meter fall protection rating. It is suitable for prolongs use outdoors or in extremely harsh environments.

High Performance Reading

The MR10A7 can read all RFID high frequency chipsets (ISO1443A, ISO1443B, ISO15693 and NFC), including wireless key cards, debit cards, and the often-seen EasyCard

Excellent Compatibility

Featuring Secure Simple Paring (SSP), the MR10A7 is compatible with the various mobile phones and tablets in the market. The user simply taps on the screen to connect via Bluetooth Human Interface Device (HID) — no pincode required.

Long Battery Life

The 1000mA internal lithium battery powers up to 10,000 scans on a full charge, eliminating the need for frequent battery changes, ensuring employee efficiency.

Human Centred Design

Streamlined, simple button and indicator light design saves users from spending time fumbling. The unique mode indicator light and vibrator communicates read status to the user even in noisy surroundings. A detachable hand strap is also included, so the device may be tied to the waist or hung on the neck, making it easy to reach for anytime use, and hard to lose.

1-2. Package Contents

Each MR10A7 package includes the following items:

- 1. MR10A7 Wireless NFC Reader
- 2. One (1) Hand Strap
- 3. One (1) Micro USB cable

1-3. Product Characteristics and Specifications

1-3-1. NFC Tags Supported by the MR10A7

The MR10A7 can scan the entire series of high frequency NFC tags, including those supporting NFC standards like ISO14443A, ISO14443B, ISO15693, etc. Common NFC tags are listed in Table 1-1*.

Standard	Tag name
	Mifare S-70
	Mifare S-50
ISO14443A	Mifare Ultralight
	Mifare DesFire (MF3)
	SLE66R35 (M-Classic)
ISO14442B	SRIX512
13014443B	SRIX4K
	I-Code SLI
	Ti2048 (Plus)
ISO15693	Ti256 (Standard)
	SRF55V10P (EM)
	Advant ATC1024
	Topaz 96/ 512
Others	Felica
	Felica Lite
	NTAG 203/ 215/ 216

Table 1-1: NFC Tags supported by the MR10A7

* The contents of this table are subject to change, without notice, following technical development.

1-3-2. MR10A7 Product Specifications

Performance	
Frequency	13.56MHz
Standard	ISO 15693 ISO 14443A ISO 14443B
Memory	2 MB
Read Mode	Single read
Typical Reading	ISO 14443: 0~65mm
Distance	ISO 15693: 0~80mm
Physical Characteristics	
Dimension	W42.5×L102×H21.5 mm
Weight	70g
Color	White
Material	PC
Cable	1.5 M (Micro USB cable)
Trigger	Scan Button, Function Button
Indicator	Buzzer, LED, Vibrator
Power	
Operation Voltage	3.7 VDC
Working Current	< 250mA
Standby Current	< 75mA
Battery	3.7V, 1000mAh, Lithium Battery
Number of Scan (per full charge)	10,000 scans (1 scan/ 5 secs, Bluetooth connected)
Connectivity	
Radio	Bluetooth 2.1 + EDR (Class2)
Range	10m (line of sight)
Interface/ Profile	BT HID BT SPP USB HID USB VCP Memory
User Environment	1
Operating Temperature	-10~55°C
Storage Temperature	-20~65°C
Humidity	0%~95%RH (Non-condensing)
Drop Durability	1.5M
Sealing	IP55
Regulatory	
ESD	Functional after 4KV contact, 8KV air discharge
EMC/RF	FCC Part 15B Class B, Part 15C, CE EN55022/24/32, EN301489-1-17, EN300328 V1.9.1 TELEC
Safety	EN/IEC60950-1
Environmental	WEEE, RoHS 2.0

Table 1-2: MR10A7 Specifications

1-3-3. MR10A7 Indicator Lights and Sounds

MR10A7's LED indicators use three colours: blue, green and red, as per Figure 1-1. In combination with the buzzer they indicate different conditions, in Configuration Mode.

Status	Blue LED	Green LED	Red LED	Beeper
Power up			lits 1 second	1 long beep
Good Read		lits 1 second		1 short beep*
Bluetooth Disconnected (Discoverable)	flashing			
Bluetooth Connected		2 flashes		2 short beeps
Deletes Pairing Record				2 short beeps
Data Transfer Failure (Offline)		lits 1 second		3 short beeps
Data Storage Failure (Memory Full)		1 flash		3 short beeps
Enters Configuration Mode		stays on		2 short beeps
Exits Configuration Mode				2 short beeps
Low Power			flashing	
Charging			stays on	

Table 1-3: MR10A7's LED Indicators and Beeper

*Please refer to **5-9-2. Beep Time** for beep length configuration.

1-4. Operating Instructions

1-4-1. Power Up

Press the Trigger Button for 2 seconds without releasing, as per Figure 1-1. The unit will emit one (1) long beep and light the LED red. When the sound then stops and the light goes off, the reader successfully powers up.



Figure 1-1: Trigger Button and Function Button positions

1-4-2. Shut Down

Method 1:

By default, the unit shuts down automatically after 5 minutes of inactivity. To adjust the auto power-off timeout, please refer to Chapter **5-8. Enter Sleep Mode / Timer**

Method 2:

Using a needle or paper clip, press the Reset Button located at the bottom of the MR10A7 once, as per Figure 1-2. This will force a shut down.



Figure 1-2: Reset Button position

1-4-3. Connecting to a PC/ Notebook

Step 1:

Press and hold the Trigger Button for 2 seconds to power up the unit, after which the blue indicator LED will flash continuously. (If the blue LED does not flash, it means the unit is not currently in Bluetooth Mode. Please refer to Section **5-3. Communication Interface**, and change the Communication Interface to BT-HID.)

Step 2:

Enter the PC/Notebook's Bluetooth application, as per Figure 1-3, and click Add a Device.



Figure 1-3: PC/NB Bluetooth application Main Window

Step 3:

In the Add a device window, double click **HF RFID Reader** to connect, as per Figure 1-4.

G	If Add a device	×
	Select a device to add to this computer Windows will continue to look for new devices and display them here.	
	MARSON-TIM-PC Bluetooth Desktop computer HF RFID READER Bluetooth Keyboard	
	What if Windows doesn't find my device?	
	<u>N</u> ext C	ancel

Figure 1-4: Select Bluetooth Device window

Step 4:

When successfully connected the MR10A7 will emit two short beeps, and the blue LED indicator will shut off. The PC/NB will show a message window like in Figure 1-5, and after clicking *Close* the PC/NB Bluetooth application Main Window will show **HF RFID Reader** as a connected device, as per Figure 1-6.



Figure 1-5: Connection Successful message window



Figure 1-6: PC/NB Bluetooth application Main Window

Step 5:

Launch a program that can accept HID keyboard input, such as Notepad. NFC Tag data read by the MR10A7 will output to that program

1-4-4. Connecting to an Apple iOS Device

Step 1:

Press and hold the Trigger Button for 2 seconds to boot the unit, after which the blue LED indicator will flash continuously. (If the blue LED indicator does not flash, it means the unit is not currently in Bluetooth Mode for its Communication Interface. Please refer to Section **5-3**. **Communication Interface**, and change the Communication Interface to **BT-HID**.)

Step 2:

On the Apple iOS device, go to **Settings > Bluetooth**, and turn on Bluetooth, as per Figure 1-8.



Step 3: In the discoverable devices list, select **HF RFID Reader**, as per Figure 1-9





Figure 1-9: Select HF RFID Reader from the discovera devices list.

Step 4:

Upon establishing connection the MR10A7 will emit two short beeps and turn off its blue LED indicator. Also, the HF RFID Reader will list as "Connected" in the Apple iOS device's Bluetooth devices list, as per Figure 1-10.

	Settings	Bluetoo	th
	Bluetooth		
	Now discoverable	as "iPhon	ne 5s".
	MY DEVICES		
	HF RFID Read	ler	Connected (i)
	OTHER DEVICES	No. Contraction of the second	
Figu	ure 1-10: The HF RFID	Reader no	ow lists as "Connected"

in the discoverable devices list.

Step 5:

Launch an app that can accept HID keyboard input, such as Notes. NFC Tag data read by MR10A7 will output to that app, as per Figure 1-11.



Figure 1-11: NFC Tag data will output to an app

Step 6:

If a virtual keyboard is required, please press the Function Button once, as per Figure 1-12. At this moment the MR10A7 will emit one short beep, and the Apple iOS device's virtual keyboard will pop out.





1-4-5. Connecting to an Android Device

Step 1:

Press and hold the Trigger Button for 2 seconds to boot the unit, after which the blue LED indicator will flash continuously. (If the blue LED does not flash, it means the unit is not currently in Bluetooth Mode. Please refer to Section **5-3. Communication Interface**, and change the Communication Interface to BT-HID.)

Step 2:

On the Android device, go to **Settings > Bluetooth**, and turn on Bluetooth, as per Figure 1-13.



Figure 1-13: Bluetooth Settings screen

Step 3:

In the available devices list, select HF RFID Reader, as per Figure 1-14.



Figure 1-14: Select HF RFID Reader from the Bluetooth Settings screen.

Step 4:

Upon establishing connection the MR10A7 will emit two short beeps and turn off its blue LED indicator. Also, the HF RFID Reader will list as "Connected" in the Android device's Bluetooth devices list, as per Figure 1-15.



Figure 1-15: The HF RFID Reader now lists as "Connected" in the Bluetooth setup screen.

Step 5:

Launch an app that can accept HID keyboard input, such as ColorNote. NFC Tag data read by the MR10A7 will output to that app, as shown in Figure 1-16.

	⊪ . ≉	14:28
<u>∠</u> T 🗇 ७ ८	Cancel	Save
Time Log : 19/12/2014	14:29:55	
Tag Name : I-Code SLI		
UID : E004010010DE587	70	

Figure 1-16: NFC Tag data outputs to an app.

Step 6:

If a virtual keyboard is required, please go to **Settings > Language and Input > Default**, and turn off the physical keyboard (or in some cases, turn on the on-screen keyboard) in the Select Input Method screen, as shown in Figure 1-17. At this time the virtual keyboard will resume normal operation.



Figure 1-17: Turn on the on-screen keyboard.

1-4-6. Reading NFC Tags

MR10A7's RFID antenna is located at its front (as per Figure 1-18). When reading, hold the unit, aim at the NFC tag (as per Figure 1-19), and press the Trigger button. If reading is successful (Good Read), the MR10A7 will emit one beep and the green LED indicator will simultaneously lit for one second. Reading Range varies based on NFC tag specifications, as Table 1-4 describes.

Standard	Reading Range
ISO 14443A	0~25mm
ISO 14443B	0~25mm
ISO 15693	0~50mm
Others	0~25mm



Figure 1-18: Antenna, LED, Trigger Button and Function Button locations



Figure 1-19: Aiming at an NFC Tag and Reading Range

1-4-7. Clearing the Bluetooth Pairing Record

The MR10A7 will save its Bluetooth pairing records and, when disconnected, will automatically attempt to restore previous connections. By doing the following, will clear MR10A7's Bluetooth pairing record, facilitating new connections:

Long press on the Function Button for 5 seconds without releasing. The unit will emit three (3) beeps and the blue LED will start flashing as confirmation that the reader is discoverable by the host.

After clearing its Bluetooth pairing record the MR10A7 will break off all Bluetooth connections, entering Bluetooth Disconnected status.





CAUTION ! After clearing the Bluetooth connection record the MR10A7 will enter Bluetooth Disconnected status and continuously flash its blue LED indicator. If the blue LED indicator does not flash, it means the unit's Communication Interface is not in Bluetooth Mode. Please refer to Section **5-3. Communication Interface**.

1-4-8. Storing/Deleting Memory Data

When the Communication Interface is set to Memory (refer to Section **5-3. Communication Interface**), data obtained from NFC Tag read operations will be stored in MR10A7's memory. The following steps will store or delete the data within.

A. Storing the Data in Memory

Step 1:

After completing an NFC Tag read operation, use a micro USB cable and connect the MR10A7 to a PC/NB.

Step 2

Open the *My Computer* window and enter the removable storage device "MiniScan", as per Figure 1-21.



Figure 1-21: Entering the removable storage device "MiniScan" through My Computer.

Step 3:

Copy the file TAGDATA.TXT, found in the removable storage device "MiniScan", to the PC/NB, as per Figure 1-22.

Computer	► MiniScan (ŀ:) -	✓ Search MiniSca	n (l:)	×
Organize	✓ Burn New folder		!≡ ▼ 🚺	0
🔆 Favorites	▲ Name	Date modified	Туре	Size
Normal Desktop Cownloads Recent Places	TAGDATA	2012/1/20 下午 08:	Text Document	
 Libraries Documents Music Pictures Videos 	E			
 Computer 7-64 (C:) 7-32 (D:) MiniScan (I:) 				
	• • III			۰.
1 item				

Figure 1-22: Copy the file TAGDATA.TXT to the PC/NB.

Step 4:

Open TAGDATA.TXT using Excel.

Step 5:

In the *Text Import Wizard, Step 1 of 3* dialogue box, choose *Delimited*, and click *Next*, as per Figure 1-23.

Text Import Wizard - Step 1 of 3	?	×
The Text Wizard has determined that your data is Delimited.		
If this is correct, choose Next, or choose the data type that best describes your data.		
Original data type		
Choose the file type that best describes your data:		
Event width - Fields are aligned in columns with spaces between each field		
Thed wilder The as are angled in columns was spaces between each neid.		
Start import at row: 1 File origin: 950 : Chinese Traditional (Big5)		~
My data has headers.		
Preview of file C:\Users\User\Desktop\TAGDATA.txt.		
1 19/12/2014, 14:51:20, Tag Name: MS-50, UID:E004010010DE5870		^
2 19/12/2014,14:51:20,Tag Name:MS-50,UID:E004012310DE5872 3 19/12/2014,14:51:20,Tag Name:MS-50,UID:E004010010AE5871		
4 19/12/2014, 14:51:20, Tag Name: MS-50, UID: E004010EF0DE5870		
519/12/2014,14:51:20,1ag Name:MS-50,01D:E005010011242AEC		\checkmark
	>	
Cancel < Back <u>N</u> ext >	<u>F</u> inis	h

Figure 1-23: Text Import Wizard, Step 1 of 3 dialogue box.

Step 6:

In the *Text Import Wizard - Step 2 of 3 d*ialogue box, select Comma, and click *Next*, as per Figure 1-24.

Text Import Wizard - Step 2 of 3 ?	×
This screen lets you set the delimiters your data contains. You can see how your text is affected in the preview below.	
Delimiters Iab Semicolon ✓ Comma Text gualifier: Space Qther:	
Data preview	
19/12/2014 14:51:20 Tag Name:MS-50 UID:E004010010DE5870 19/12/2014 14:51:20 Tag Name:MS-50 UID:E004012310DE5872 19/12/2014 14:51:20 Tag Name:MS-50 UID:E004010010AE5871 19/12/2014 14:51:20 Tag Name:MS-50 UID:E004010EF0DE5870 19/12/2014 14:51:20 Tag Name:MS-50 UID:E004010EF0DE5870 19/12/2014 14:51:20 Tag Name:MS-50 UID:E005010011242AEC	
Cancel <u>Back</u> <u>Next</u> >	

Figure 1-24: Text Import Wizard - Step 2 of 3 dialogue box

Step 7:

In the *Text Import Wizard - Step 3 of 3 d*ialogue box, if there are no special requirements, directly click *Finish*, as per Figure 1-25.

	Text Import Wizard - Step 3 of 3 ?	×
This screen lets you select each colun	nn and set the Data Format.	
Column data format General Iext Date: MDY V Do not import column (skip)	'General' converts numeric values to numbers, date values to dates, and all remain values to text. Advanced	aining
Data greview MDY General General 19/12/2014 14:51:20 Tag Nam 19/12/2014 14:51:20 Tag Nam	General ne:MS-50 UID:E004010010DE5870 ne:MS-50 UID:E004012310DE5872 ne:MS-50 UID:E004010010AE5871 ne:MS-50 UID:E004010E70DE5870 ne:MS-50 UID:E0040101242AEC	^ ~ >
	Cancel < <u>B</u> ack Next > <u>Finit</u>	sh

Figure 1-25: Text Import Wizard - Step 3 of 3 dialogue

Step 8:

The Memory data will appear in the form of an Excel spreadsheet, as per Figure 1-26. If required to change the data format, please refer to sub-section **5-4. Memory Communication Interface**

x≣	5.	¢-{	₹0		TAGE	DATA - Exce	əl	(7		?	Ť	- 7	×
F	ILE HO	OME INS	SERT PAG	GE LAYOU	FORM	IULAS D	ATA	A REVIE	W VIEW				
.	1 🕹 🕺	新細明體	· 11	· = =	= 🗗	General	-	₩ Condi	tional Forn	natting 🔹		A	
Pas	te	B <i>I</i> <u>U</u> -	A A			\$ - %	9	Forma	it as Table	*	Cells	Editing	
-	*			• • • •	87 -	€.0 .00 .00 →.0		Cell St	yles *		*	*	
Clip	board 🗔	Fon	t I	a Aligni	ment 🗔	Number	Ŀ¥.		Styles				^
A1		• :	$\times \checkmark$	f _x	19/12/20	014							~
	Α	В	С	D	Е	F		G	Н	Ι	J	ſ	
1	19/12/201	14:51:20	Tag Name	UID:E00	4010010E	DE5870							
2	19/12/201	14:51:20	Tag Name	UID:E00	4012310E	DE5872							
3	19/12/2014	14:51:20	Tag Name	UID:E00	4010010A	E5871							
4	19/12/201	14:51:20	Tag Name	UID:E00	4010EF0I	DE5870							_
5	19/12/201	14:51:20	Tag Name	UID:E00	50100112	42AEC							
6	19/12/2014	14:51:20	Tag Name	UID:E00	4010010E	DE5870							_
7													
8													
9													_
10													_
11	•	TAGDATA	A (+)					: •					•
REA	DY							⊞ 🗉		I		- 🕂 100	0%

Figure 1-26: Memory data, as shown in an Excel table.

B. Deleting the Data in Memory

To delete the data on MR10A7's Memory, please directly delete the file TAGDATA.TXT in the removable storage device "MiniScan", as per Figure 1-27. In about 5 seconds the MR10A7 will emit 2 short beeps, indicating a successful delete.

					×
Computer >	MiniScan (I:)	•	Search MiniSco	an (l:)	٩
Organize 🔻 🏾 💭 Open 👻	Print Burn	New folder		= •	0
💻 Desktop 🔷	Name	^	Date modified	Туре	Size
 Downloads Recent Places Libraries Documents Music Pictures Videos 	TAGDATA	Open Print Edit Open with Send to Cut	2012/1/20 下午 08:	Text Document	
Computer 2 7-64 (C:) 7-32 (D:) DVD RW Drive (E:) OFF MiniScan (L:) TAGDATA Date Text Document	 modified: 2012/1/20 Size: 393 bytes 	Create shortcut Delete Rename Properties 下午 08:16 Date created	: 2012/1/10 上午 01:02		Þ

Figure 1-27: Deleting the file TAGDATA.TXT

2. Configuration Mode

2-1. Entering Configuration Mode

Under normal circumstances, the MR10A7 enters the Normal Operation Mode upon power-up. The following steps will switch the MR10A7 to Configuration Mode and connect it to the Host PC's MARSON RFID Utility.

Step 1:

Use a micro USB cable and connect the MR10A7 to the Host PC.

Step 2:

Press and hold MR10A7's Function button first without releasing, then press and hold the Trigger button, as per Figure 2-1. After pressing both buttons for about 5 seconds, the MR10A7 will emit two short beeps, turn on Green LED indicator, and enter Configuration Mode. At the same time it will switch its Communication Interface to USB Virtual COM.



Figure 2-1: Press both buttons on the MR10A7.

Step 3:

Check the Host PC's Device Manager window to see if the USB Virtual COM device has been detected, as per Figure 2-2.



Figure 2-2: Check the Host PC and see whether the USB Virtual COM device has been detected.

Step 4:

Open the MARSON RFID Utility from the Host PC and complete the connection, as per Figure 3-1.

The above steps will switch the MR10A7 to Configuration Mode and connect it to the Host PC's Marson RFID Utility. The User may begin setting parameters on the MR10A7. For details refer to Sections **4. RFID Parameters Setup** and **5. Other Parameters Setup**.

2-2. Canceling / Exiting Configuration Mode

Once the MR10A7 enters Configuration Mode, if there are no communications instructions with the Host PC within the Waiting Time, or if **Exit** is selected within the MARSON RFID Utility, it will automatically exit Configuration Mode and return to Normal Operation Mode. Please refer to Section **6-1. System**. When the unit exits Configuration Mode it will emit 2 short beeps and turn off the Green LED indicator.

While within Waiting Time, pressing MR10A7's Function button and then the Trigger button, holding both buttons for about 5 seconds, will also exit Configuration Mode. For full details refer to Section **5-11**. Waiting Time.

CAUTION ! Prior to entering Configuration Mode, the MR10A7 will record the Communication Interface in use. Therefore if the Communication Interface was BT-HID prior to entering Configuration Mode, upon exiting Configuration Mode the Communication Interface will be restored to BT-HID; if the Communication Interface setting gets changed while in Configuration Mode, for example changed to USB-HID, then upon exiting Configuration Mode the Communication Interface will become the newly designated one, in this case USB-HID. For more on MR10A7's Communication Interface, see Section **5-3. Communication Interface**.

3. Operating the MARSON RFID Utility

Execute MARSON RFID Utility^{RFID} and enter the program; choose the COM port to connect with, and click the "Link" button, as per Figure 3-1. Once connected, you will enter the Program's Main Window, as per Figure 3-2.

Communication setting	r.	
• HF-RFID settings	O UHF-RFID :	settings
UART (Virtual Comm)	COM1	*
115200	None	~
8 Bits	1 stop bit	~
Wait Time 15		Link

Figure 3-1 Choosing the COM port to connect

3-1. Introduction to Main Window

Once connected, enter the Program Operation main window, as shown in Figure 3-2 and explained below.

- (1) The Title Bar (upper-most area) shows the firmware version of the connected MR10A7.
- (2) Additional Functions area:

Communication: Disconnect or change the COM port.

setrieve: Read MR10A7's operation parameters.

Update: Upload presently configured operation data, etc.

For full details please refer to Section 6. MARSON RFID Utility Built-in Functions

(3) Settings Window: provides System Parameters and Settings.

For full details please refer to 4. RFID Parameters Setup, and 5. Other Parameters Setup

- (4) Notifications Window: Shows currently selected parameters and easy explanations
- (5) Status Bar (lower-most area): shows MR10A7's current connection state
- (6) Exit: Exit the Utility program and inform MR10A7 as to the program termination. The MR10A7 will return to Normal Operation Mode.



Figure 3-2 Program Operation Main Window

4. RFID Parameters Setup

Below are all options of RFID Parameters Setup displayed in tree view:



Choose the item to configure, then double click the left mouse button or press *Enter* to enter the desired parameters setting window.

4-1. Operation Mode

2	Operation Mode	×
Trigge	er Mode	
Paran	neter	
 Tri 	gger Mode*	
O Au	to Mode	

To configure the Operation Mode for either Trigger Mode or Auto Mode, choose one of the two.

Configuration Method:

Check one of the two options, then click send the new setting to the MR10A7.

Default setting: Trigger Mode

Detailed explanations for the two above-mentioned Operation modes are as follow:

(1) Trigger Mode Operation Method:

<A> Press the Trigger button to start a Tag Scan Session. Upon successful Tag Scan (Good Read) the Scan Session will stop.

- If the Trigger button is pressed but no successful Tag scan occurred within the Session Time, the Scan Session will terminate. In any case, releasing the Trigger button will terminate the Scan Session.
- <C> In Sleep Mode, pressing the Trigger button will automatically reactivate Trigger Mode. For Sleep Mode settings, please refer to **4-8. Enter Sleep Mode / Timer**.

(2) Auto Mode Operation Method:

- <A> The Auto Mode follows the same rules of operation as the Trigger Mode, except Tag Scan Sessions start automatically, without pressing the Trigger button.
- Scan Sessions do not terminate unless the unit enters Sleep Mode.
- <C> Pressing the Trigger button while in Sleep Mode will automatically reactivate Auto Mode.

CAUTION ! Auto Mode is more power-consuming.

4-2. Tag Info

2	Tag Info		×
Read UI	D only		
Parame	ter		
Read	UID only*		
O Read	All Data Block		
O Read	NDEF		
Default		~	OK

Tag Info provides user the options of Read UID only, Read All Data Block (reads full data on user memory) and Read NDEF (only reads data that conforms to NDEF(NFC Data Exchange Format) format on user memory)

Configuration Method:

Check one of the three options, then click every to send the new setting to the MR10A7.

Default setting: Read UID only

CAUTION !

Access Password may be requested if the Tag is locked when Tag Info is set to "Read All Data Block" or "Read NDEF". Please see 4-5-7. Data Block Output to know more about how to output the data block of User Memory.

4-2-1. Starting Pointer and Data Length

🖌 Starting Pointer	Х
Starting Pointer	
	0 ‡
0	1023
Data Length	
	1024 🛊
1	1024
	Aller

If Tag Info = Read All Data Block or Read NDEF, Starting Pointer and Data Length are configurable to define .

Configuration Method: Set Starting Pointer and Data Length, once confirmed then click version to send the new parameter value to the MR10A7.

Default setting: Disable Starting Pointer (byte): 0 (0~1023) Data Length (byte): 1 (1~1024)

4-3. Session Time and Delay Time

Sets the Session Time for a Scan Session and the Delay Time between Tags Scan.

4-3-1. Session Time Operation Method

Figure	4-5	
ø.	Session Time	×
Disable		
Parame	eter	^
• Disa	ble*	
O 1 se	cond	
O 2 se	conds	
O 3 se	conds	
O 4 se	conds	
O 5 se	conds	
O 6 se	conds	
O 7 se	conds	
O 8 se	conds	
O 9 se	conds	
L <u>O 10 c</u>	aconde	
Default		🖊 ОК

In Trigger Mode, if the Trigger button is pressed and no successful Tag scan is completed within the Session Time, the Scan Session terminates. This may be disabled by setting Session Time to 0 (Disabled).

Configuration Method: Select a value (0~255 seconds). When sure click \checkmark or to transfer the set parameter value to the MR10A7. Default setting: Disable

4-3-2. Delay Time Operation Method

2	Delay Time	×
Disable		
Parameter		^
• Disable*		
O 100 ms		
O 200 ms		
O 300 ms		
O 400 ms		
O 500 ms		
O 600 ms		
O 700 ms		
O 800 ms		
O 900 ms		
O 1000 mc		~
Default		🔶 ок

Sets the Delay Time between every Tag scan.

Configuration Method:

Select a value (ranging from 0 ~ 1500ms). When sure click work to transfer the set parameter value to the MR10A7. Default setting: Disable (0 ms deactivates)

4-4. Select Tag Category

Figure 4-7
🧭 Select Tag Cate 🗾
✓ ISO 14443A
☑ ISO 15693
✓ ISO 14443B
Other
Default OK

Chooses the types of NFC Tags that may enter a Scan Session. These are divided into ISO14443A, ISO14443B, ISO15693, and Others, as per the ISO. Multiple items may be selected.

Configuration Method: Multiple types may be selected. Once confirmed, click ever to transfer the set parameter values to the MR10A7 Default setting: All are selected Often seen types of NFC Tags are listed in the table below:

ISO Category	ISO 14443A	ISO 15693	ISO 14443B	Others
Тад	Mifare S-50	I-Code SLI	SRI-X 512	Topaz
Name	Mifare S-70	ATC 1024	SRI-X 4K	Felica
	Mifare Ultralight	TI-256(Standard)		Felica Lite
	Mifare DesFire	TI-2048(Plus)		NTAG 203
	SLE66R35(M-Classic)	SRF55V10P(EM)		

Table 4-1: NFC Tag code names

4-5. Data Output Format

🗄 🗉 Data Output Format

Preamble : 🗄 🚸 Time Log : Enable Time Log Prefix : Disable 🗄 🚸 Tag Name Data : Enable Tag Name Prefix : Disable AFI Data : Enable AFI Prefix : Disable ⊨ 😽 DSFID Data : Enable SFID Prefix : Disable UID Data : Enable **UID Prefix** : Disable UID Format : Normal 🗄 🚸 Data Block Output : Enable Data Content : Hexadecimal UTF8 format : Disable V No Tag Message : Disable Postamble :

Figure 4-8: Setting the Data Output Format

4-5-1. Preamble

Preamble can be a prefix of up to 16 digits composed of alphanumeric characters/ function codes added to the beginning of an output data.

٢							Pi	reamb	le							×
																_
Hex	-0	-1	-2	-3	-4	-5	-8	-7	-8	-9	-8	-B	-C	-0	۰E	-F
0-	NUL	SOH	STX	EDX	EOT	ENQ	ACK	BEL	85	нт	LF	vr	FF	CR	so	\$1
1.	DLE	DC1	DC2	DC3	DC4	NAK	SYN	ETB	CAN	BA	SUB	ESC	FS	<u> </u>	RS	US
2-	space	1			\$	2	8	1.1	()		•	1.1	1.1	1.1	1
3.	0	1	2	3	4	- 6	6	7	8	9	1.0	1.1	<		>	?
4	e.	A	Ð	С	D	E	E F	G	н	1.1	- J -	К.	L L	M	N	0
5.	P	Q	R	s	T	U	 V 	W.	×	Υ	z	1	- X -	1	^	-
6-	1	- a	ь	•	d	. e.	- f -	9	- h	- i -	1	k	1.1		•	0
7.	P	q	- F -	5	t	U.	×	U.	×	У	2	(- I -	- 1	~	0EL
8.	€	0	,	1			+	+	^	%0	Š	<	Œ	0	Ž	0
9-	0	`	,			•	-	-	~	TH	š	>	œ	\$	ž	9
A.	nbsp	1	¢	£	×	¥	1	s	-	0	3	<	-		œ	-
B-	•	±	2	>	1	μ	1			1	0	>	54	55	34	Ł
C-	À	Á	Â	Ã	Ä	Å	Æ	ç	È	É	Ê	E	Ì	Í	î	I
D-	Ð	Ň	ò	ó	ô	ö	ŏ	×	ø	Ù	Ú	Û	Ü	Ý	Þ	8
E-	à	á	â	ã	ä	8	æ	c	è	é	ê	ë	1	í	î	ī
F	A	ő	ò	6	ô	8	ō	+	6	ù.	ú	0	0	ý.	b	1:20

Configuration Method:

Keyboard input or click on the on-screen keyboard.

Default setting: None

Other Data Output Format option includes settings for Time Log, Tag Name, AFI, DSFID, UID and

Data Block (User Memory). For example: *Time Log: 2014/12/1912:30:59 Tag Name: I-Code SLI AFI: 10 DSFID: 00 UID: AA839F31*



Each parameter is set like in Figure 4-10: simply choose one of either Obisable Enable and then click or to transfer parameter values to the MR10A7.

Whether to output the Time Log for Tag scans. For date and time formats please refer to **5-1. Date Format** and **5-2. Time Format**

Time Log:

OEnable
 OEnable

Configuration Method: Choose one of the two. Default

setting: Disable

If Time Log is enabled, the following may also be configured:

4-5-2-1. Configure whether to output Time Log's Caption "Time Log":

Time Log Prefix:

Disable OEnableConfiguration Method: Choose one of the twoDefault setting: Disable

4-5-3. Tag Name

Whether to output Tag code names. Please refer to Table 4-1.

Tag Name Data :

OEnable
 OEnable

Configuration Method: Choose one of the two.

Default setting: Disable

If Tag Name Data is enabled, the following may also be configured:

4-5-3-1. Configure whether to output Tag Name's caption "Tag Name":

Tag Name Prefix :

Disable OEnableConfiguration Method: Choose one of the two.Default setting: Disable

4-5-4. AFI Data

Whether to output AFI data. Only ISO15693 and ISO14443B's Tags provide AFI data. AFI Data:

Disable OEnableConfiguration Method: Choose one of the two.Default setting: Disable

If AFI data is enabled, the following may also be configured: 4-5-4-1. Configure whether to output AFI caption "AFI"

AFI Prefix :

DisableOEnableConfiguration Method: Choose one of the two.Default setting: Disable

4-5-5. DSFID Data

Whether to output DSFID. Only ISO15693 Tags provide DSFID data. DSFID Data :

Disable
 OEnable

Configuration Method: Choose one of the two.

Default setting: Disable °

If DSFID is enabled, the following may also be configured:

4-5-5-1. Configure whether to output DSFID's caption "DSFID"

4-5-6. UID Data

Whether to output Tags' UID Data.

UID Data:

ODisable ©Enable Configuration Method: Choose one of the two. Default: **Enable**

If UID Data is enabled, the following may also be configured:

4-5-6-1. Configure whether to output UID caption "UID"

UID Prefix :

OEnable
 OEnable

Configuration Method: Choose one of the two. Default setting: Disable

4-5-6-2. Configure whether to output UID in reversed order

UID Format:

Normal
 OReversed

Configuration Method: Choose one of the two.

Default setting: Normal

4-5-7. Data Block Output

Whether to output the data block of User Memory. This is only applicable when **4.2 Tag Info** is set to "Read All Data Block" or "Read NDEF".

4-5-7-1. Tag Info = Read All Data Block / Read NDEF

Data Block Output:

Oisable

e OEnable

Configuration Method: Choose one of the two. Default setting: Disable

4-5-7-1-1. Data Content

When Data Block Output is enabled, user can set Data Content

🖉 Data Content	×
Hexadecimal	
Parameter	
Hexadecimal*	
O Character	

Configuration Method: Choose one of the two, once confirmed then click core to send the new parameter to the MR10A7.

Default Setting: Hexadecimal

*Note:

Please note that the Hexadecimal converts one byte of data into two. For Example, tag data <0x37> is send to the host as <0x33><0x37> two bytes in total. When Character (ASCII) is selected, tag data <0x37> is sent as <0x37>.

4-5-7-1-2. UTF8 Format

When Data Block Output is enabled, user can set UTF8 format

Figure 4-12		
🐓 UTF8 format		\times
Disable		
Parameter		
• Disable*		· .
O Enable		
L		
Default		OK

Configuration Method: Choose one of the two, once confirmed then click $\bigcirc \bigcirc \ltimes$ to send the new parameter to the MR10A7.

Default Setting: Disable

4-5-8. No Tag Message

Whether to output No Tag Message. No Tag Message is a preset message, such as "No Tag", that displays when no Tag could be read upon terminating a Scan Session. It is applicable only for Trigger Mode.

No Tag Message : Disable
OEnable
Configuration Method: Choose one of the two.
Default setting: Disable

4-5-9. Postamble

Postamble can be a suffix of up to 16 digits composed of alphanumeric characters/ function codes added to the end of an output data.

Hote 4 2 3 4 4 4 7 4 0 X. 80 C. 00 8 Mot 594 71 87	a d a a d d a
INK A I Q J 4. 4. 4. 2. A J B C D 5 NLL 101 107 670 680 642 48. 4 J J B C D D D T C D A J D A B C D	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$
No. 4 2 3 4 5 4 7 4 3 X. 8 C. O 6. No. 150 150 150 150 160 AC 160 AC 160 AC 100 17 17 160 AC 100 AC 100 17 170 150 100 AC 100 AC 100 17 170 150 100 AC 100<	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
Hw A A S A S A S A S C	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
0 No. 100 100 100 600	Nu. 100. 107. ET ET <t< td=""></t<>
i Dec DFI DF2 DF2 DF4 NH DF1 CM DM UD EF5 OF 0 PP#4 I 2 I I S I	DID DC0 DC1 DC4 WC1 WT1 WT1 CM1 DM1 UM1 UM1
D TM T F T C T C T C T C T C T C T C T C T C T <tht< th=""> T T T</tht<>	ppm 1 * J S L ·
3- 0 1 2 2 4 5 6 7 8 9 : : < = 4 @2 A B C D E F 0 H 1 J K L M 5- P O R S T U W X Y Z [\Lambda M 6- '' a b 0 d e f g h i j k i m	$ \begin{array}{c c c c c c c c c c c c c c c c c c c $
4 6 A 8 C D E F G H I J K L M 5 P 0 R 6 T U V W X Y Z L I J 6 T 3 b 0 d e f Q h i j K L N	Q A B C D E F O H I J K L M N O P 0 A 5 T U W X Y Z L M A O A
S P Q R S T U V W X Y Z I N I 6 `` a b o d e f g h i j k i m	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$
6- [*] a b 0 d e f g h i j k 1 m	a b a d d e f g h i j j k j m m n c p q r r s t u v y z i j k j m n c D p q r r u v v v x y z i j a D
	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$
7. p q r s t u v u x y z []]	€ ① ,
8. € ① , / , † ‡ ^ ‰ Š < Œ 🔮	● · · · · · · · · · · · · · · · · ·
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Anbspittex ¥¦§`© * « ¬ -	100p 1 5 2 A 7 1 3 8 7 6 7 7 8
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D Đ Ñ Ô Ô Ô Ö Ô × Ø Ù Ú Û Ü Ý E à á â ã ã â â œ ç è é ê ê ï í	À À Ä Å Å Å Å ¢ ç é é é f i
Þ Ð Ñ Ò Ó Ö Ö Ò × Ø Ù Ú Û Ü Ý	À Á Â Ã Ă Ă Â Æ Ç É É Ê Ê Ì Î Î Î Đ Ñ Ò Ó Ô Õ Ŏ × Ø Ù Ú Ú Ü Ÿ ∳ 8
	Î Î Î 3 3 3 2 3 3 3 2 3 5 5 5 5 6 5 6 5 6 5 6 6 6 5 6 6 6 7 7 7 7

Configuration Method:

Keyboard input or click on the on-screen keyboard.

Default setting: None

5. Other Parameters Setup

MR10A7 has other parameters not related to RFID, such Date Format, Time Format, Communication Interface, Sleep Mode etc., as per Figure 5-1.





5-1. Date Format



Data output of memory data's time tag.

Sets how date format is arranged: D means Date, M means Month, Y means Year. 16 choices are available.

Configuration Method:

Choose one among the 16, and press **✓** ○ to transfer the parameter setting to the MR10A7.

Default setting: DD/MM/YYYY

5-2. Time Format



Time format of memory data's time tag. Sets how time format is arranged: H means Hour, M means Minute, S means Second. 2 choices are available.

Configuration Method:

Choose one of the two, and press parameter value to the MR10A7.



Default setting: HH:MM:SS

5-3. Communication Interface



Sets the communication interface between the MR10A7 and the Host PC, meaning the communication interface for MR10A7's data output. Five choices are available.

Configuration Method:

Choose one of the five, and press parameter values to the MR10A7.



Default setting: BT-HID

Each Communication Interface is elaborated upon below:

(1) USB-VCP

Use USB Virtual COM as communication interface.

(2) USB-HID

Use the USB HID Keyboard as communication interface.

(3) Memory

When using Memory as the communication interface, the MR10A7 will store tag data scanned its internal memory (about 2MB in size). To access that file, a wired connection with Host PC is required. Tag data will be stored in ASCII format (2 bytes) or Hexadecimal format (one byte) which is selected in **4-5-0 Data Content Format**

(4) BT-HID

Uses the Bluetooth HID Keyboard communication interface.

(5) BT-SPP

Uses the Bluetooth SPP (BT Virtual COM) communication interface.

(6) BT-SPP (w/o Auto-Reconnect)

Uses the Bluetooth SPP (BT Virtual COM) communication interface. Reader will not automatically reconnect to the host.

(7) Wireless Dongle

This is an interface that works with Marson MT600 Wireless Dongle only.

5-4. Memory Communication Interface Options

When the Memory Communication Interface is chosen, each scanned data is marked with date and time, and then stored in the internal memory. When the memory is full with data, Tag reading will elicit a warning signal in the form of 3 short beeps and a one second lighting of the red LED indicator, and no reading will actually occur. Only when the data inside the memory has been received and deleted by the Host PC may the Scan Session resume. Choosing Memory as the Communication Interface enables the Field Separator and Storage Sequence configuration options.

5-4-1. Field Separator

Figure 5-5		
ø.	Field Separator	×
Field Separa	tor :	
Default		V OK

Sets the symbol used to separate each field for data formatting.

Configuration Method:

Directly input the symbol, maximum 1 Byte in size. Then click to transfer the parameter value to the MR10A7.

Default setting: comma (,)

5-4-2. Storage Sequence

Figure 5-6	
Storage	e Sequence
Sequence - 1	Date ~
Sequence - 2	Time ~
Sequence - 3	Tag Data 🗸
Default	🖌 ОК

Sets the storage sequence of the fields Date, Time, Tag Data.

Configuration Method: For each Storage Sequence, choose one of the options. No option may be chosen twice. When done, click \checkmark or transfer the parameter setting to the MR10A7.

Default setting: Sequence - 1: Date Sequence - 2: Time Sequence - 3: Tag Data

5-5. BT-HID and BT-SPP Communication Interface Options

When BT-HID or BT-SPP is chosen as the Communication Interface, the BT-ID and BT-Pin-Code options become available.

5-5-1. BT-ID



Sets the Bluetooth-ID name, for Host-PC display purposes.

Configuration Method:

Choose a desired phrase, maximum 16 Bytes. Once chosen, click

Default setting: HF RFID Reader

5-5-2. Host MAC Address

Host M			
	AC Address		×
C Address :			
lt		V OK	:
	C Address :	C Address :	C Address :

Sets the MAC address of the host that MR10A7 will automatically connect with.

Configuration Method:

Enter the Bluetooth MAC address (without colon ":"), maximum 12 Bytes. Once chosen, click or to transfer the parameter value to the MR10A7.

Default setting: Null

5-5-3. BT-Pin-Code

igure 5-9		
ø.	BT-Pin-Code	×
BT-Pin-Code :		
1234		
Default		✔ ОК

Sets the Pin-Code used when connecting to the Host-PC via BT-SPP.

Configuration Method: Enter the Pin-Code value, maximum 8 Bytes. Once chosen, click of to transfer the parameter value to the MR10A7.

Default setting: 1234

5-6. USB-HID and BT-HID Communication Interface Options

When USB-HID or BT-HID are chosen as the Communication Interface, additional options become available. These include Key Layout, Key Numeric, Key Caps lock, Inter-block, and Inter-character.

5-6-1. Keyboard Layout

2	Key Layout	×
(qwerty)	USA	
Parame	ter	 ^
• (qwe	rty) USA*	
O Alt M	ode	
O (qwe	rtz) German	
O (azer	ty) French	
O (qwe	rty) Spanish	
O (qwe	rty) Italian	
O (qwe	rtz) Swiss-German	
O (qwe	rty) Czech	
O (qwe	rty) UK	
O (qwe	rty) Japanese	
∩ (auto	Hundony	~

Sets the language used for MR10A7's data output to the Host-PC. 24 choices are available.

Configuration Method:

Choose one, then click <u>v</u> or to transfer the parameter setting to the MR10A7.

Default setting: (qwerty) USA

5-6-2. Key Numeric



Sets the keyboard used for MR10A7's Scan Code output.

Configuration Method: Choose one, then click <u>constant</u> to transfer the parameter setting to the MR10A7.

Default setting: Alpha Numeric

5-6-3. Key Caps Lock

2	Key	/ Caps lo	ock	×
Lock Of	f			
Parame	eter			
Lock	COff*			
O Lock	(On			
O Auto	0			

Sets the keyboards Caps Lock state to On, Off or Auto.

Configuration Method: Choose one, then click **or** to transfer the parameter setting to the MR10A7.

Default setting: Lock Off

5-6-4. Inter-black Interval Time

^
^
~

Sets the Interval Time between each packet of data (including the separator symbol) and the next.

Configuration Method: Choose one (value range $0 \sim 500 \text{ ms}$), then click \checkmark to transfer the parameter setting to the MR10A7.

Default setting: 0 ms (deactivated)

5-6-5. Inter-character Interval Time

2	Inter-character		×
0 ms			
Parameter			
• 0 ms*			
O 1 ms			
O 2 ms			
O 3 ms			
O 4 ms			
O 5 ms			
Default		~	OK

Sets the Interval Time between one character and the next within each packet of data.

Configuration Method:

Choose one, then click \checkmark is to transfer the parameter value to the MR10A7.

Default setting: 0 ms

5-7. Data Terminator

Sets the terminator symbol used when uploading MR10A7's data to the Host-PC. It can be 1 or 2 Bytes depending on the Communication Interface.

1_5	NUL	•														
Hex	-0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-A	۰B	٠C	۰D	۰E	-F
0-	NUL	SOH	STX	ETX	EOT	ENQ	ACK	BEL	BS	HT	LF	VT	FF	CR	\$O	SI
1-	DLE	DC1	DC2	DC3	DC4	NAK	SYN	ETB	CAN	BM	SUB	ESC	FS	GS	RS	US
2-	space	1	-	#	\$	x	8.	1.1	())	×	+	1.1	-		1
3-	Ð	1	2	3	4	- 5	6	7	8	9	1.1	4.0	<		>	?
4	e	A	в	С	D	E	F	G	н	1	J	К	L	м	N	0
5.	P	Q	R	S	Т	U	V	W	х	Y	Z	(- X -	1	-	-
6-	1	а	ь	0	d	e	f	9	h	i	j	k	1	m	n	•
7.	P	9	r	s	t	u	v		×	У	2	{			~	DE
8-	€	\odot		£			+	ŧ	~	%~	S	<	Œ	6	Z	0
9.	69		-			•	-	-		TH	ŝ	>	œ	4500	ž	<u> </u>
- *-	nosp		¢	±	×	¥	i	3		0	•	*	7	-	8	
B-		±	2	~		ų v	1		ź	1		*	3/4	1/2	-94	2
-	H	A 6	Ä	<u>н</u>	Å	<u>н</u>	<u> </u>	Ç	E	E O	E Ó	E	1	1	1	1
- D ¹	à	- N	ŝ	3	5	8		ĉ	à	ó	â	Ö	3	1	Ŷ	7
E.	a	ő	à	á	â	ã	ö	· ·	ø	è	ú	0	0	۱ ۵	- h	1980
E- F-	à ð Default	á	â ò Il Clear	ă ó	ä ô	a õ	æ ö	ç ÷	è ø	é ù	êú	ë	ì	í ý	P î þ	i i I Marian OK

Configuration Method: Choose or type in a symbol using the special keyboard shown in Figure 4.14. Show 1 or 2 Bytes. When sure, click or to transfer the parameter value to MR10A7.

(1) Data T	erminator	of USB-HID / BT-HID interface:
Default:	ç NUL	(<0xE7><0x00>). Totals 2 Bytes

(2) Data Terminator of USB-VCP / BT-SPP interface: Default: CR LF (<0x0D><0x0A>). Totals 2 Bytes

5-8. Sleep Mode / Timer

Sets the activation status for Sleep Mode and the Timer value used for entering Sleep Mode. The MR10A7 will enter Sleep mode to conserve power if there is no successful Tag scan within a set amount of time.

F	gure 5-16	
	Z Enter Sleep Mode	
	Enable	
	Parameter	
	O Disable	
	• Enable*	
	Default OK	

5-8-1. Enter Sleep Mode

Sets whether to activate Sleep Mode.

Configuration Method:

Choose one, then click \checkmark is to transfer the parameter setting to the MR10A7.

Default setting: Enable (activate)



5-8-2. Timer of Sleep Mode

Sets the waiting time for entering Sleep Mode.

Configuration Method: Choose a value (range $00:10 \sim 60:00 \text{ mm:ss}$), then click \checkmark or to transfer the parameter value to the MR10A7.

Default setting: 05:00

5-9. Buzzer

Beep tones serve as an indication of operation status. One short beep signifies a Good Read within a Scan Session; 3 short beeps warn of an error.

5-9-1. Beep Tone

Figure 5-18		
~	Beep Tone	×
Medium Parameter O Off O Low Medium O High	*	
Default		🖌 ОК

Sets the beep volume or disables beeping.

Configuration Method: Choose one, then click <u>cos</u> to transfer the parameter setting to the MR10A7.

Default setting: Medium

5-9-2. Beep Time

-	Beep Time	×
L50 ms		
Parameter		^
O 80 ms		
O 90 ms		
O 100 ms		
O 110 ms		
O 120 ms		
O 130 ms		
O 140 ms		
• 150 ms*		
O 160 ms		
O 170 ms		
∩ 100 mc		 ~

Sets the beep length for the short beep used to signify a Good Read.

Configuration Method: Choose a value between 50 ~ 500 ms, using 10 ms intervals.

When confirmed, click ever to transfer the parameter value to the MR10A7.

Default setting: 150 ms

5-10. Vibrator

Sets whether to activate the Vibrator, which may be used to signify a Good Read during a Scan Session.

igure 5-20		
9	Vibrator	×
Disable		
Parameter		
Oisable*		
O Enable		
Default		🖌 ок
Derault		₩ OK

Configuration Method: Choose one of the options, then click ✓ or transfer the parameter setting to the MR10A7.

Default setting: Disable (deactivated)

***Note:** The duration of vibration is fixed at 200 ms.

5-11. Waiting Time

Sets the waiting time used prior to automatically exiting MR10A7's Configuration Mode.



When the MR10A7 is in Configuration Mode, if there are no communication instructions between it and the Host PC within a Waiting Time, it will automatically exit Configuration Mode and return to Normal Operation Mode. Or, while within Waiting Time, if the MR10A7's Function button is pressed, followed by the Trigger button, and both buttons are held for about 5 seconds, it will also exit Configuration Mode.

Configuration Method: Select a value between $1 \sim 60$ minutes, using 1 minute intervals. When confirmed, click \checkmark or to transfer the parameter value to the MR10A7.

Default setting: 5 minutes

5-12. System Time

Sets the MR10A7's System Time

Date format: Year (4 digits), Month (2 digits), Date (2 digits). e.g. Date: 2014/12/19

Time format: Hour (2 digits), Minute (2 digits), Second (2 digits). e.g. Time: 09:50:30

Figure	5-22		
🖋 System	Time		X
Reader	: 2014/08/25 22	2:42:25	
Now :	2014/08/25	22:42:44	\$
			🖌 ок
			OK OK

Configuration Method: Input the Year, Month, Day, Hour, Minute, Second within their respective value ranges. When confirmed, click or to transfer the parameter values to the MR10A7.

Default: Synchronized as Host-PC's System Time

6. Additional Functions



Figure 6-1 : RFID Utility's Additional Functions

MARSON RFID Utility's additional functions include System, Operation and Tools, as below:

6-1. System

# 9	System (E)	
<u>2</u>	Communication	
	Workplace	
inu.	Exit	

<A> Communication: When connected, you may press "Stop" to get disconnected and change COM port and initiate another connection.

Comm	nunic	ation setting	
IF-RFID settings		O UHF-RFID settings	
UART (Virtual Comm)	\mathbf{v}	COM4	~
115200	Y	None	V
8 Bits	~	1 stop bit	V
Wait Time 15		8	ton

CAUTION ! When terminating a connection, the system will force MR10A7 to terminate the configuration process.

 Workplace: Functions such as Reset to Default Window, Window Size, Fonts ...etc, are configurable in the Workplace Window.

Ø	Workplace – 🗆 🗙
📚 Save-Home (H) 🛛 🔤 Layout (L)	
Contents	Edit
Default Workplace	Double-click to default 640 * 480.
Usualness Font	[Font: Name=Tahoma, Size=12, Units=3, GdiC
Window-Width	640
Window-Height	480
Version	V1.01 (2014/08/15)

In the lower part of selection window, choose the item you wish to adjust, then double click on it with your mouse or press the *ENTER* key to start adjusting.

- (1) Default Workplace: Restores all defaults, including window size, font style, font size, etc.
- (2) Usualness Font: Mostly used for adjusting fonts for the Main Menu. The user determines its use.
- (3) Window-Width, Height: Adjusts window size only for the Main Window.

<C> Exit: When exiting the MARSON RFID Utility, the system will ask whether to terminate all configuration operation.

Figure 6-4

RFID	— × —
End Progra Press < OK	am? (> or < Cancel >
ОК	Cancel

CAUTION ! When exiting from the MARSON RFID Utility is confirmed, the system will instruct the MR10A7 to terminate the configuration process.

6-2. Operation



<A> 📥 Retrieve: Read parameter values from the connected MR10A7.

with the currently set parameter values.

Only when connected to an MR10A7 may Retrieve and Update be used.

 Zeset: Restore all parameters to their Default settings.

< i > When the MR10A7 is connected to the Host-PC

Can restore all parameter values for the current Settings window to their previous states (Undo All Changes), restore them to their factory Default settings (Reset Parameters to Default), or restore all parameters inside the MR10A7 to their factory Default settings (Reset **Reader's** Parameter to Default).



< ii > When the MR10A7 is disconnected from the Host-PC

Can restore all parameter values for the current Settings window to their previous states (Undo All Changes), or restore them to their factory Default settings (Reset Parameters to Default).

ø	Select an action	×
() Ur	do All Changes	
🖲 Re	set Parameters to Default	
	OK	
	Figure 6-6	

Default			×
<u> </u>	Reset these pa Press < OK > o	rameters? or < Cancel >	
(ОК	Cance	I
	Figure 6	-7	

The System will ask whether to confirm execution, as per Figure 6-7.

6-3. Tools



<A> The Language: Sets the display language.



 Firmware Upgrade: Updates firmware on the MR10A7. Please refer to **7. Updating Firmware on MR10A7.**

<C> Read Memory: To retrieve the stored data on the MR10A7 through the RFID Utility. Please refer to **6-3-1. Memory.**

6-3-1. Memory



< i > Select the desired output data format: "Hex" or "Text". Or click ***** Read with "Text" as the default data format.

Hex	-
Text	
Hex	



< iii > When the program has finished retrieving the data, the data will be displayed on program's window. Click Save to save the data as a New Text File.

SM3-n-2.00.BTA Sample 1 , VER:	1.3.7 – 🗆 🗙
System (E) Operation (Q) Tools (I) Setting Memory Text Image: Save Setting	
24/07/2015,10:49:16,Tag Name : MS-50,5AF3A428 24/07/2015,10:49:17,Tag Name : MS-50,5AF3A428 24/07/2015,10:49:18,Tag Name : MS-50,5AF3A428 27/07/2015,18:08:54,Tag Name : MS-50,5AF3A428 27/07/2015,18:08:54,Tag Name : MS-50,5AF3A428 27/07/2015,18:08:55,Tag Name : MS-50,5AF3A428 27/07/2015,18:09:58,Tag Name : MS-50,8EB9A428 27/07/2015,18:09:58,Tag Name : MS-50,8EB9A428 27/07/2015,18:09:58,Tag Name : MS-50,8EB9A428 27/07/2015,18:09:58,Tag Name : MS-50,8EB9A428 27/07/2015,18:09:59,Tag Name : MS-50,8EB9A428 27/07/2015,18:09:59,Tag Name : MS-50,8EB9A428 27/07/2015,18:09:59,Tag Name : MS-50,8EB9A428 27/07/2015,18:09:59,Tag Name : MS-50,8EB9A428 27/07/2015,18:10:01,Tag Name : MS-50,8EB9A428	
😻 : UART,COM5,115200,None,8 Bits,1 stop bit	

< iv > If you want to format the memory on MR10A7, please click * Format Memory . A pop-up window will appear and warn that this will remove all the memory data. Click OK to continue.



< v > While the utility is formatting the memory, DO NOT unplug the MR10A7. Once the formatting process is completed, a "finish!" pop-up window will appear, and the MR10A7 will automatically terminate the configuration mode and disconnect itself from the RFID Utility.

		_	
SM3-n-2.00.BTA Sample 1 , VER:1.3.7	-		×
System (E) \leq Operation (O) \leq Tools (T)			
🖉 Setting 🚸 Memory			
Text 🔹 🖉 Read 📲 Save 🐟 Format Memory			
Format Memory Device Memory (Please do not unplug device.)			^
			~
UART.COM5.115200.None.8 Bits.1 stop bit 2088960 Bytes			



7. Updating Firmware on MR10A7

7-1. Entering Firmware Update Mode

Under normal circumstances, the MR10A7 boots into the Normal Operation Mode. The following steps will move the MR10A7 to Firmware Update Mode and connect it to the Host PC's RFID Utility, to facilitate firmware upgrade through USB Virtual COM communication. Steps are as follow:

Step1:

Make sure that the MR10A7 is disconnected from the Host-PC.

Connect the MR10A7 to the Host PC using the Micro USB Cable.

Step 2:

Press the Function button and the Trigger button on the MR10A7, as per Figure 7-1. Hold both buttons, do not release, and use a pin or a straightened paperclip to press the Reset button on the bottom, as per Figure 7-2. The MR10A7 will enter the Firmware Update Mode.



Figure 7-1: Press both buttons on the MR10A7 simultaneously.



Figure 7-2: Press the Reset button

Step 3:

Still holding down the Function button and Trigger button, check the Device Manager on the Host PC to see if a USB Virtual COM has appeared, as per Figure 7-3. Now release the Function button and the Trigger button. The MR10A7 will automatically change its Communication Interface to USB Virtual COM.



Figure 7-3: Check the Host-PC to see if it has detected the USB Virtual COM.

7-2. Executing Firmware Update

Step 1:

Execute the $U_{\text{tility.exe}}^{\text{RFID}}$ program. Do not establish a connection.

Press 🗵 to cancel the connection process and enter the program, as per Figure 7-4.

		Cancel
UART (Virtual Comm)	COM1	n Connectio
115200	None	
8 Bits	1 stop bit 💌	
Wait Time 15	Link	
Figure 7	-4	- I

Step 2:

Choose K Tools (T) and execute Firmware Upgrade

Please refer to 6-3. Tools

Step 3

Choose the COM port, as per Figure 7-5.



Step 4:

Load the bin file, as per Figures 7-5 and 7-6.

Whale	Office TestRun REID HE-NEC	▼ 4+ Search HF		2
Organize - New fo	lder	1.11	80 - 11	
- Envoriter	Name	Date modified	Туре	5
Desktop	20141001	11/10/2014 2:44 PM	File folder	
Downloads	20141205	12/4/2014 3:47 PM	File folder	
Secent Places	Language	9/22/2014 1:34 PM	File folder	
	Picture	8/14/2014 11:03 AM	File folder	
🥽 Libraries	SM3n112BTA.bin	10/3/2014 2:20 PM	BIN File	
Documents	SM3n113BTA-S1.bin	9/19/2014 9:04 AM	BIN File	
 Music Pictures Videos 	Type: BIN File Size: 62.7 KB Date modified: 9/19/2	014 9:04 AM		
P Computer				
🗣 Network		m		
File	name: SM3n113BTA-S1.bin	+ BIN-File		-
		Open	Cance	

Step 5:

Click Update to execute firmware upgrade, as per Figure 7-5. The system will ask whether to confirm execution.

Operating	Procedure:
<u>^</u>	Attention, please do not unplug reader while it is being programmed. It may cause damage to the reader. Press < OK > or < Cancel >
	OK Cancel
	Figure 7-7

CAUTION ! While the **MR10A7 is updating its firmware** (Figure 7-8), please avoid unnecessary errors and do not unplug the cable. Incomplete firmware update may cause damage to unit.

ø	Reader F	irmware Upgra	de 💌
Wait Time	15	COM4	×
Update File F	ath		
D:\LinuxXP\ \SM3n110B1	Whale_Office' IA_Test.bin	\TestRun\RFID\HF-NFC	Stop

Step 6:

When update is complete, click "OK" to finish the update program, as per Figure 7-9. The MR10A7 will reboot and return to Normal Operation Mode.

