User Manual

DH Technology ,Inc.

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THIS DEVICE COMPLIES WITH PART 15 OF THE FCC RULES. OPERATION IS SUBJECT TO THE FOLLOWING TWO CONDITIONS. (1)THE DEVICE MAY NOT CAUSE HARMFUL INTERFERENCE AND (2)THIS DEVICE MUST ACCEPT ANY INTERFERENCE RECEIVED, INCLUDING INTERFERENCE THAT MAY CAUSE UNDESIRED OPERATION.

ALSO, TO PREVENT INTERFERENCE TO FEDERAL GOVERNMENT READER SYSTEMS, OPERATION GOVERNMENT RADAR SYSTEMS, OPERATION UNDER THE PROVISIONS OF THIS SECTION IS NOT PERMITTED WITHIN 40 KILOMETERS OF THE FOLLOWING LOCATIONS:

DoD Radar Site	Latitude	Longitude
Beale Air Force Base	39°08′10″N	121°21′04″W
Cape Cod Air Force Station	41°45′07″N	070°32′17″W
Clear Air Force Station	64°55′16″N	143°05′02″W
Cavalier Air Force Station	48°43′12″N	097°54′00″W
Eglin Air Force Base	30°43′12″N	086°12′36″W

CAUTION : Any changes or modifications in construction of this device which are not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

The user of the device shall be responsible for submitting updated information in the event the operating location or other information changes after the initial registration by the grantee. The information provided by the grantee or user to the Commission shall include the name, address, telephone number and e-mail address of the user, the address and geographic coordinates of the operating location, and the FCC identification number of the device. The material shall be submitted to the following address:

Experimental Licensing Branch,
OET, Federal Communications Commission,
445 12th Street, SW., Washington,
DC 20554, ATTN: RFID Registration.

Professional installation is required. Installers are responsible for ensuring that the proper antenna is used as described in the FCC filing.

and this product is for industrial use product.

1. Summary

A) The RFID system for containers is composed of an "Active RFID Tag" and a "Reader", and the communication between the tag and reader follows a Master-Slave model.

B) Containers are embedded with 433.92Mhz RFID tag, and the reader, if necessary, gives a wake-up signal, activates the RFID tag, so that it can obtain container-related information.

C) The reader works according to the order of middleware or a terminal(or a computer). The communication air protocol between the reader and the tag follows ISO/IEC 18000-7.

D) By using a RFID tag system, the recognition rate and recognition distance for containers is greatly improved, so that it can lay the foundation for the job automation of gate, CY storage, shipment, and Air Cargo.

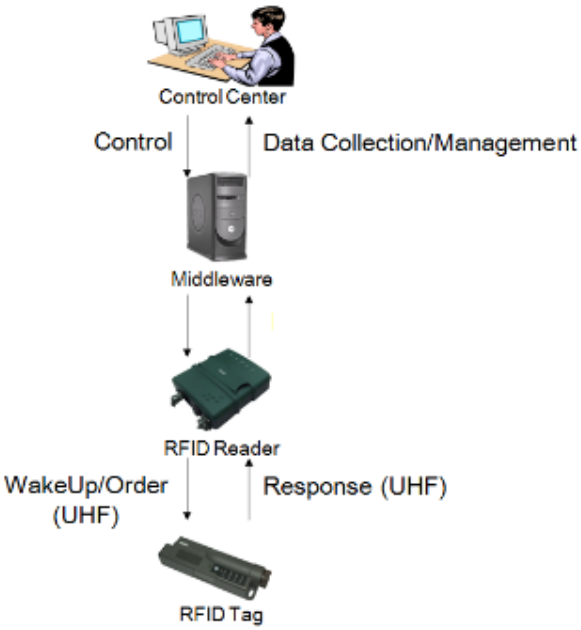
E) By making the best use of wireless/network technology, this system can be flexibly applied regardless of container's movement of position

2. Composition

2.1 Deceives Composition

No.	Model Name	Type	Remarks
1	RFID Tag	433.92MHz active tag	DH-ST1
2	RFID Reader	Fixed type	DH-R1

2.2 System Composition



2.3 Dimension

Section	Contents
 DH-ST1(DH Sensor Tag Type 1)	≫Dimension: 14.3cm*4.3cm*3.0 cm
 DH-R1 (DH Reader Type 1)	≫Dimension: 22.3cm*20.7cm*6.6cm

3. Specification of the System

3.1 RFID Tag

Tag Name	DH-ST1
UHF	Transceiver
Frequency	433.92Mhz
Modulation	FSK
Range	100m
Power	3.6mW
Tag Wake-up	UHF
Air Protocol	ISO/IEC 18000-7
Memory	
Tag ID	4bytes(RO)
User ID	16bytes(RW)
User Memory	128Kbytes
Beacon	yes
Range(unobstructed)	~100m
Battery	
Type	Non-replaceable, Non-rechargeable
Volts/Material	3.6V/Lithium
Life	3years(5 read events/day)
Re-Usable	yes
Temperature	Operation: -30℃ to +70℃
	Storage: -40℃ to +70℃
Humidity	100% Condensing
Approval	KCC

3.2 RFID Reader

Reader Name	DH-R1
Case Material	PC(Polycarbonate)/PBT(Polybuthylene Terephalate)
Environmental Temperature	Operating: -30℃ to +60℃
	Storage: -40℃ to +80℃
Humidity	90% Condensing
RF Frequency(Transceiver)	433.92Mhz
Range	Up to 100m
Modulation	FSK, deviation 35Khz for receiver, 50Khz for transmit
Sensitivity	95 dBm
IF Frequency	307.2Khz
Data Rate	27.8Kbps
Air Protocol	ISO/IEC 18000-7
RFID Tag Compatibility	All 433Mhz Active RFID Tags
Network Interface	RS485, RS232
Upgrades	Supports firmware downloads
Diagnostics	Supports remote reader performance status reports
Type Approval	KCC
Other Mounting	Mounting Kit

4. Function of the System

□ The communication protocol and operation between the reader and the tag follows ISO/IEC 18000-7.

5. Installation of the System

□ Installation of the system(Container tag and Reader) follows ISO 10374.2

6. System Operation

□ Basic Operation

A reader(DH-R1) communicates with a server(or middleware) over TCP/IP, and communicates with a tag(DH-ST1) over RF. Orders sent via a server(or middleware) are transmitted to the reader(DH-R1), witch gives a wake-up signal, send the orders to the tag(DH-ST1), receives the response data from the tag(DH-ST1), and finally transmits them to the server(or middleware).

7. Certification

□ FCCID : YWVDH-R1

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.

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