-DATASHEET

ISO-18000-6C Protocol Reader

File status					
Edition	**write/modify**	**Write**	**Review**	**Date**	**Change content**
01	**Write**	**LH**	**YKY**	**2018/02/25**	**Initial**

Catalog

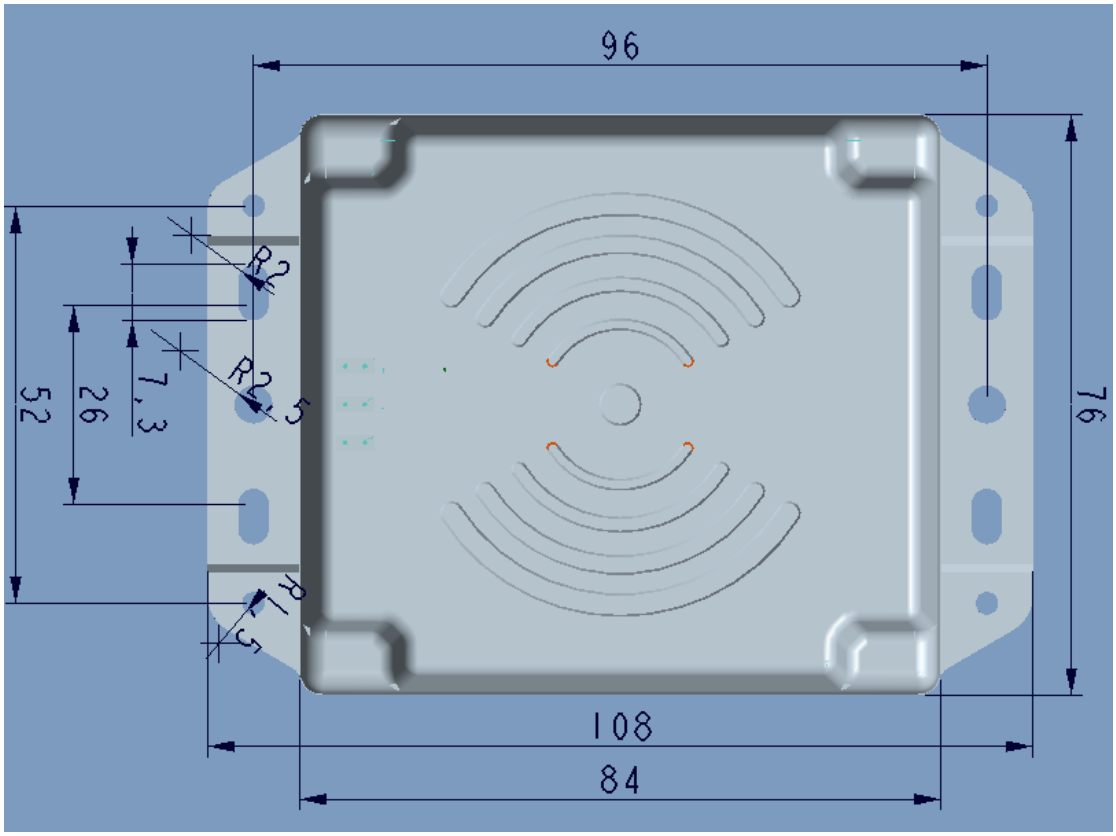
1.Summary

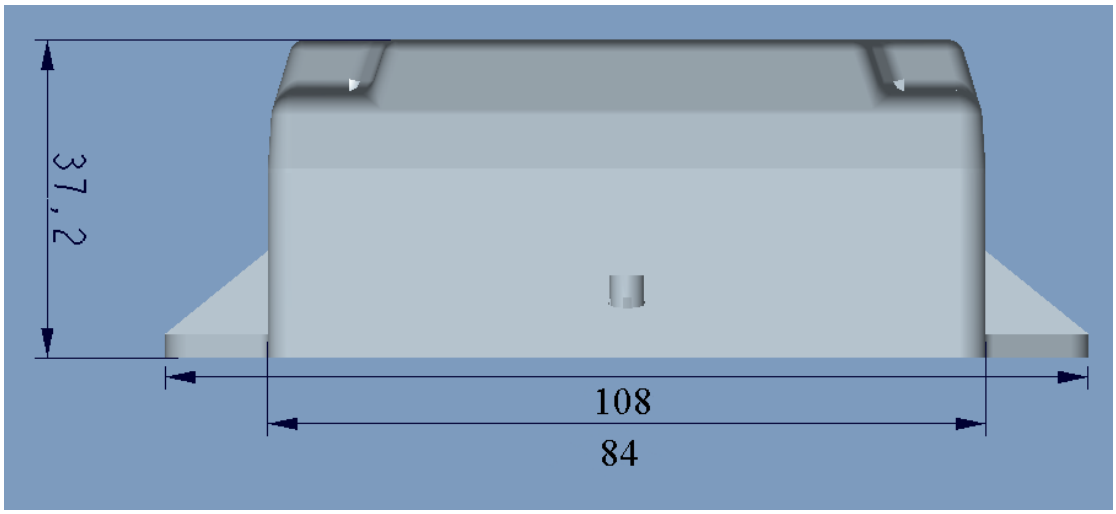
KX-760T-USB is an UHF RFID reader/writer supporting USB2.0 communication. The whole design adopts sealed design, which can be applied in asset management, production management, logistics storage management, unmanned supermarket and smart home and other applications.

2. Features

- Low power consumption；high reliability；
- Support USB2.0 communication
- Industrial level design
- Power adjustable; use 9662 tag，Reading distance ： 0.1m-3m
- UHF EPC G2 Reader module
- Supporting ISO-18000-6C Protocol Standards
- IP65

3. Mechanical Characteristics




37.2
108
84

4. Recommended working conditions

Parameter	Symbol	Min	Standard	Max	Unit
Voltage supply	VIN		5		V
Operating temperature	T_a	-20	-	+50	℃
Storage temperature	T_s	-40		+85	℃

5. Electrical characteristics

AC Electrical characteristics (Ta =25℃, VIN =5V, VSS = 0V)

Parameter	Symbol	Min.	Typ.	Max.	Unit
RF Output Frequency	F_c	902		928	Mhz
RF port output Power	P_{out}	-2	-	25	dbm
Interrogator Transmit Spurious Emissions, In-Band	In accordance with local regulations				-
Interrogator Transmit Spurious Emissions, Out of-Band	In accordance with local regulations				-
RF Bandwidth	In accordance with local regulations				-
Transmit data rate	TR_{ate}	-	26K	-	bps
Modulation	ASK				
Modulation depth	90% normally				
Data Coding	PIE				
Demodulation	ASK				
Download data rate	DR_{ate}	-	40K	-	bps
Data encoding	FM0				

DC Electrical characteristics (VIN =5V, VSS= 0V)

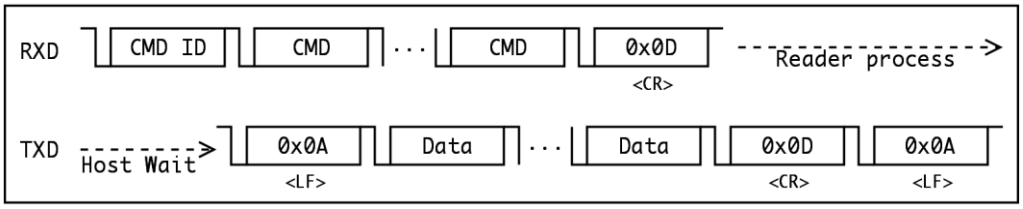
Parameter	Symbol	Min	Standard	Max	Unit
Average working current	I_{OC}	-	160	-	mA
Standby current	I_{SB}	-	-	10	mA
Peak current	I_{peak}	-	300	-	mA
Dormancy current	I_{dis}		4		mA
Enable pin high (enabled)	$V_{EN(HI)}$	0.9	-	VIN	V
Enable pin low (disabled)	$V_{EN(LO)}$	0	-	0.4	V
UART_RX Input Low Voltage	V_{IL}	-0.5	-	0.66	V
UART_RX Input High Voltage	V_{IH}	1.98	-	3.8	V
UART_TX Output Low Voltage	V_{OL}	-	-	0.5	V
UART_TX Output High Voltage	V_{OH}	2.2	-	-	V

6. UART Interface

The Host send command and wait for reader return message, the UART parameter as follows:

Baud Rate: 38400 (default)
Data Bits: 8 bit
Stop Bits: 1 bit
Parity Bit: none

Figure 1 UART Communication



ASCII PROTOCOL COMMANDS

Command and return message is transmitted as **ASCII** format. All command is start with a command character and arguments (if any, in **hexadecimal** units) and stop with a <CR>(0x0D hex), and return message is start with a <LF>(0x0A hex) , command
first character and stop with a <CR><LF>.
If command is none match, return message will be <LF>X<CR><LF>.
Ex.
PC or Host: S<CR>
Reader return message: <LF>S01234567<CR><LF>

RFID Command Overview

Command*	Return Message**	Description
V	Vxxyy,<message> xx: major version number yy: minor version number <message>: other info.	display reader firmware version
S	S01234567 01234567 is reader ID	display reader ID
Q	Q<none or EPC> <none or EPC> none: no tag in RF field EPC: PC+EPC+CRC16	display tag EPC ID
R<bank>,<address>,<length> <bank> memory bank 0: reserved 1: EPC 2: TID 3: USER <address> start address	R<none or read data> or <error code> <none or read data> none: no tag in RF field <Error code> 0: other error 3: memory overrun	read tag memory data

0 ~ 3FFF <length> read word length 1 ~ 20	4: memory locked B: Insufficient power F: Non-specific error	
W<bank>,<address>,<length>,<data> <bank> memory bank 0: reserved 1: EPC 2: TID 3: USER <address> start address 0 ~ 3FFF <length> write words length 1 ~ 20	W<none or <OK>> or <error code> <none or <OK>> none: no tag in RF field <OK>: written ok <error code> 0: other error 3: memory overrun 4: memory locked B: Insufficient power F: Non-specific error Z00~Z1F: words write 3Z00~3Z1F: error code and words write	write data to tag memory
K<password>,<recom> <password> kill password 00000000~FFFFFFFF <recom> recommissioning 0~7	K<none or <OK>> or <error code> <none or <OK>> none: no tag in RF field <OK>: kill ok <error code> 0: other error 3: memory overrun 4: memory locked B: Insufficient power F: Non-specific error	kill tag
L<mask>,<action> <mask> lock mask 000~3FF <action> lock action 000~3FF	L<none or <OK>> or <error code> <none or <OK>> none: no tag in RF field <OK>: lock ok <error code> 0: other error 3: memory overrun 4: memory locked B: Insufficient power F: Non-specific error	lock memory
P<password> <password>accessPassword 00000000~FFFFFFFF	P	set access password for R W L command, one time use
U	U<none or EPC>	Multi-TAG read EPC

	<none or EPC> none: no tag in RF field EPC: PC+EPC+CRC16	
G1 G0 G2	G1 G0 G2	Start command logging End command logging Run logging commands For external TACT switch function
T<bank>,<bit address>,<bit length >,<bit data > <bank> memory bank 0: reserved 1: EPC 2: TID 3: USER <bit address> start bit address 0~3FFF <bit length > select bit length 1~60 <bit data > select bit mask data	T	Select matching tag, one time use
N0,00 N1, <value> <value> 00~14	N<value> <NULL>	read RFID power level set RFID power(-2~25dBm)
N4,00 N5, <value> <value> 01~05 01: US 902~928 02: TW 922~928 03: CN 920~925 04: CN2 840~845 05: EU 865~868	N<value> <NULL>	read Regulation set Regulation

7. FCC note

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.

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.

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

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

This equipment should be installed and operated with minimum distance 20cm between the radiator and your body.