

永奕科技股份有限公司 YEON TECHNOLOGIES CO., LTD.

YRU-150 User Manuel installation

and

operations guide



VEC

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THE HOLOGIES CO.



A. Warning

Federal Communication Commission Interference Statement

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.

FCC Caution:

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.

FCC Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.



B. Introduction

UHF RFID EPC C1G2 Reader Features

- Compatible with ISO-18000-6C
- 2 / 4 Antenna Port (SMA Jack)
- Support Ethernet, RS232, RS485, USB Interface
- Support GPIO function(4 input & 4 output)
- Average power consumption: under 420mA at 12V
- RF out MAX=25dBm

C. Reader Spec.

Electrical characteristics

1.2.1 DC characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit
verage operating current	Ioc	~	320		mA
Standby current	Isb	1	170	G.V	mA
Peak current	Ipeak	1	420	× -	mA

1.2.2 AC characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	
RF Output Frequency	Fc	922	-	928	Mhz	
RF Output Power	Pout		-	25	dBm	
RF Transmission setup time	Trf_out	-	-	0.5	ms	
RF Frequency error	Ferror	-	-	1000	ppm	
Transmit data rate	TRate	-	26K	-	bps	
Modulation		A	ASK			
Modulation Type	90% normally					
Data Coding	PIE					
Demodulation		I	ASK			
Download data rate	DRate	-	40K	-	bps	
Data encoding		I	F M 0			



D. Connector Description



4 SMA Antenna port



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GPIO Connector



Photo3								
PIN No.	Pin name	Description	PIN No.	Pin name	Description			
1	15 05	NC1	13	GPI1	GPI1			
2	GPO1	NO1	14	GPI2	GPI2			
3	Yr	COM1	15	GND	GND1			
4		NC2	16	GPI3	GPI3			
5	GPO2	NO2	17	GPI4	GPI4			
6		COM2	18	RST	Reset			
7		NC3	19	DQ185	RS485+			
8	GPO3	NO3	20	113403	RS485-			
9		COM3	21	12V	DC12V			
10		NC4	22		WD0			
11	GPO4	NO4	23		WD1			
12		COM4	24	GND	GND2			





E. DEMO Software Description

> Connect Reader & Read EPC

1. Auto select communication port

Device Connect	
已連接RFID Reader. (COM4) Multi-Reader Select COM4 –Prolific USB-to-Serial Comm Port (COM4)	
Connect Enter Reader	

2. RF Power setting

Reader Utility v2.6.2	英文 (美國)	Ý
EPC/TID Tag Record Multi Cont. Pc TID Image: Cont.	CRCI	16 Count
Pre-setting Set select to pre-command Memory Bank: Address(bit): Length(bit): Data: O1: EPC Set access to pre-command Access		Close
Password: Info _	<pre><lf>Q<cr></cr></lf></pre> <pre></pre> <))13312009E2
Write [16/10/27 17:40:03.053 [TX]	<lf>Q<cr> <lf>Q3000E200309807090</lf></cr></lf>	013312009E2
Write 16/10/27 17:40:03.053 [TX] Read 16/10/27 17:40:03.149 [RX] Lock Kill pwd Access pwd EPC bank TiD bank USER bank skip ` skip ` skip ` skip ` Lock	<pre><!-- CF-->Q<cr> <!-- creater line line line line line line line line</td--><td>013312009E2</td></cr></pre>	013312009E2

Action: Select Set bottom



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Regulation	X
c Set	Status
Area 02: TW 922~928 ~	Area : 02: TW 922~928 Frequency : hopping Offset : N/A
- Measure Frequency	Power : 20dBm
Base-band	Update
925.00MHz V Set	
Input freq. (MHz) : Adjust	16/10/27 17:40:32.391 [TX] - 0A4E302C30300D (N0,C ^ 16/10/27 17:40:32.479 [RX] - 0A4E31360D0A (N16)
Adjust frequency : +/- 30.5Hz intervals * n step	16/10/27 17:40:35.100 [TX] - 0A4E352C30320D (N5.0
+ - 1 v Reset	16/10/27 17:40:43.031 [TX] - 0A4A3030300D (J000)
	16/10/27 17:40:43.124 [RX] - 0A4A3030300D0A (J00
Baura	- 16/10/27 17:40:44.017 [TX] - 0A4E342C30300D (N4,0
25 dPm	16/10/27 17:40:44.105 [RX] - 0A4E30320D0A (N02)
Set	16/10/27 17:40:44.142 [TX] - AA06FF04008702B1
25 dBm	16/10/27 17:40:44.235 [RX] - 0000
24 dBm	16/10/27 17:40:44.235 [TX] - AA06FF04008903ED
23 dBm	16/10/27 17:40:44.322 [RX] - FFFFFF
22 dBm Set	16/10/27 17:40:44.322 [TX] - 0A4E302C30300D (N0,0
21 dBm	16/10/27 17:40:44.409 [RX] - 0A4E31360D0A (N16)
20 dBm Run	× ×
19 dBm	
18 dBm	



3. Read EPC ID

iteauer ou					英文 (美	國)	
CEPC/TID -)	- Tag Reco	ord		
			Multi Cont.	PC	EPC	CRC16	Co
Stop			√ √	3000	E20030980709013212009E2E	9380	13
TID				3000	E20030980709013312009E26	B8E9	13
Pre-setting Set select t Memory Bank: 01: EPC	pre-command Address(bit): Length(bit): Data:			4			
Set access Access Password:	o pre-command				Log		Cle
Read/Write Memory Bank: 01: EPC Write	Address: Length(word) 2 6			16/10/27 <lf>U300 <lf>U300 <lf>U300 <lf>U300 16/10/27 16/10/27</lf></lf></lf></lf>	7 17:44:19.432 [RX] - 00E20030980709013312009E26B8E9 <cr><lf 200E20030980709013212009E2E93B0<cr><lf R><lf> 7 17:44:19.470 [TX] - <lf>U<cr> 7 17:44:19.623 [RX] -</cr></lf></lf></lf </cr></lf </cr>	>	
Read]	<lf>U300 <lf>U300 <lf>U300</lf></lf></lf>	00E20030980709013312009E26B8E9 <cr><lf 00E20030980709013212009E2E93B0<cr><lf R><lf></lf></lf </cr></lf </cr>	>	
LOCK	Assess pure EBO hand	TID baak	UCED bank	16/10/27	7 17:44:19.656 [TX] - <lf>U<cr></cr></lf>		
skip	 skip ° skip 	° skip °	skip V	16/10/27 <lf>U300 <lf>U300 <lf>U300</lf></lf></lf>	7 17:44:19.812 [RX] - 00E20030980709013212009E2E93B0 <cr><lf 00E20030980709013312009E26B8E9<cr><lf R><lf></lf></lf </cr></lf </cr>	>	
LUCK				16/10/27	7 17:44:19.849 [TX] - <lf>U<cr></cr></lf>		
Kill —	Kill pwd	Reader Setting		16/10/27 <lf>U300 <lf>U300</lf></lf>	7 17:44:20.003 [RX] - 00E20030980709013312009E26B8E9 <cr><lf 00E20030980709013212009E2E93B0<cr><lf R><lf></lf></lf </cr></lf </cr>	>	

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Action: Select EPC (U) bottom and check Multi & Cont.



Engineering model

1. Select Reader Setting and press Set bottom to enter engineering model

Regulation	x
Set Area 01: US 902~928 • 1 Base-band 914.76MHz • 2 Set	Status Area : 01: US 902~928 Frequency : hopping Offset : -0.0083265MHz Power : 14dBm Update
Measure Frequency Input freq. (MHz) : 3 Adjust Adjust frequency : +/- 30.5Hz intervals + 4 - Power 14 dBm • 5 Set Measure Basebnad Mode : • Carry • RX 914.76MHz • 6 Set Tag Test 7 Run	15/08/05 10:55:47.578 [TX] - 0A4E342C30300D 15/08/05 10:55:47.688 [RX] - 0A4E30310D0A 15/08/05 10:55:47.28 [TX] - AA06FF04008702B1 15/08/05 10:55:47.838 [RX] - 0000 15/08/05 10:55:47.948 [RX] - 0A06FF04008903ED 15/08/05 10:55:47.948 [RX] - 004111 15/08/05 10:55:48.058 [RX] - 0A4E302C30300D 15/08/05 10:55:48.058 [RX] - 0A4E31300D0A
Msg:	

- 2. Frequency calibration
 - 2.1 Select test Region 《1》.
 - 2.2 Select test frequency $\langle\!\!\!\langle 2 \rangle\!\!\rangle$ and press Set to completed.

2.3 Key in the measurement value by Spectrum Analyzer 《3》 and press Adjust to completed.

2.4 Adjust manually 《4》, press "+" & "-" bottom to calibration.

3. Power setting

Select power value (5) and press Set to completed.

- 4. Carry measurement
 - 4.1 Select "Carry" and chose frequency 《6》, press Set bottom to running test.
 - 4.2 Select "Rx" and chose frequency 《6》, press Set bottom to running test.
- 5. Modulation testing

Press "Run" to test modulation test.