

UHF RFID reader performance contrast test

YR8600 VS Impinj SPEEDWAY R420

1 The test of real




1: Test environment

reader	YR8600	Impinj SPEEDWAY R420
Reader output power	30dBm	30dBm
Reader communication interface	TCP/IP	TCP/IP
DEMO software version	3.62	6.6.1.240
antenna	9DBI Circular polarization antenna (multi tag) & 5DBI Circular polarization antenna (single tag)	
tag	Alien 9662 inlay&Impinj E41-b	
feeder	Domestic 50Ωdouble silver coaxial cable	
power supply	30V 3A Switch mode regulated power supply	
computer	Thinkpad laptop	
router	Netgear 4 Port router	

2: Test project

Test project 1	80PCS tags identification rate contrast test
Test project 2	200 PCS tags identification rate contrast test
Test project 3	700 PCS tags identification rate contrast test
Test project 4	single tags identification distance contrast test
Test project 5	The machine power consumption contrast test

3: multi tags identification rate measured data

						
Tag a total of 80 PCS						
Time-consuming (approximate)		1Seconds	3 Seconds	5 Seconds	10 Seconds	30 Seconds
Identification Tag number	YR8600	74	76	78	79	79
	SPEEDWAY	66	70	70	71	71
	AY					



Tag a total of 200 PCS


Time-consuming (approximate)		2 Seconds	5 Seconds	10 Seconds	30 Seconds
Identification tag number	YR8600	162	164	167	170
	SPEEDWAY	138	144	145	145





Tag a total of 700 PCS

Time-consuming (approximate)		5 Seconds	10 Seconds	27 Seconds
Identification tag number	YR8600	424	472	482
	SPEEDWAY	380	388	394

4: Single tag identification distance measured data

		
Identify distance	YR8600	33m
	SPEEDWAY	27.5m

5: The machine power consumption measured data

power consumption	YR8600	$12V \times 0.7A = 8.4W$	
	SPEEDWAY	$23.4V \times 0.52A = 12.12W$	

Appendix: more tags test DEMO software screenshots

80 PCS tag identify 30 seconds

UHF RFID Reader Demo v3.62

读写器设置 | 18000-8C标签测试 | ISO 18000-6B标签测试 | 串口监控数据

盘存标签 (实时模式) | 盘存标签 (缓存模式) | 快速4天线盘存 | 存取标签

开始盘存 | 选择天线: ☒ 天线1 ☐ 天线2 ☐ 天线3 ☐ 天线4

数据: 已盘存的标签总数量 (个): **79**

Min RSSI: -105 dBm Max RSSI: -55 dBm

ID	EPC	PC	识别次数	RSSI	载波频率
66	E2 00 30 00 39 0C 00 78 05 20 DC B8	30 00	46	-83 dBm	912.50
67	E2 00 30 00 39 0C 00 78 05 50 DB BF	30 00	48	-78 dBm	912.50
68	E2 00 30 00 39 0C 00 79 12 00 9D AC	30 00	48	-75 dBm	912.50
69	E2 00 30 00 39 0C 00 79 16 80 69 5C	30 00	48	-70 dBm	912.50
70	E2 00 30 00 39 0C 00 79 05 50 DB B8	30 00	48	-73 dBm	912.50
71	E2 00 30 00 39 0C 00 78 12 80 95 10	30 00	48	-77 dBm	912.50
72	E2 00 30 00 39 0C 00 79 05 40 DB BA	30 00	43	-81 dBm	927.00
73	E2 00 30 00 39 0C 00 78 03 80 E7 C2	30 00	27	-85 dBm	925.50
74	E2 00 30 00 39 0C 00 78 10 20 AE 8A	30 00	23	-79 dBm	927.00
75	E2 00 30 00 39 0C 00 79 15 30 74 45	30 00	15	-84 dBm	927.00
76	E2 00 30 00 39 05 01 70 26 10 0D 0D	30 00	14	-100 dBm	902.00
77	E2 00 30 00 39 0C 00 82 14 10 83 91	30 00	13	-87 dBm	902.00
78	E2 00 30 00 39 05 01 53 26 10 0D 51	30 00	4	-85 dBm	902.00
79	E2 00 30 00 39 05 01 76 25 90 10 8F	30 00	19	-98 dBm	908.50

操作记录: ☒ 自动清空 ☐ 打开串口监控

2014-1-24 11:15:59 设置工作天线成功, 当前工作天线: 天线1
2014-1-24 11:16:00 实时盘存
2014-1-24 11:16:01 设置工作天线成功, 当前工作天线: 天线1
2014-1-24 11:16:02 实时盘存
2014-1-24 11:16:02 设置工作天线成功, 当前工作天线: 天线1
2014-1-24 11:16:03 实时盘存
2014-1-24 11:16:03 设置工作天线成功, 当前工作天线: 天线1

MultiReader for Speedway Gen2 RFID - v6.6.1.240 [RS_DefaultSettings.cfg]

File Edit Settings Help

INVENTORY RUN MODE

#	EPC VALUE	TotCnt	RD1Cnt	RD2Cnt	RDRate	RS1mx	RS
55	E200-3000-390C-0078-1050-A825	198	198	0	6.5	-57	
56	E200-3000-390C-0078-1520-7AE0	197	197	0	6.5	-51	
57	E200-3000-390C-0078-1770-5A25	197	197	0	6.5	-58	
58	E200-3000-390C-0078-1530-7441	193	193	0	6.3	-62	
59	E200-3000-390C-0078-0790-C677	197	197	0	6.5	-58	
60	E200-3000-390C-0079-2180-310E	197	197	0	6.5	-52	
61	E200-3000-390C-0078-1370-85C5	197	197	0	6.5	-52	
62	E200-3000-390C-0079-0550-DBBB	197	197	0	6.5	-53	
63	E200-3000-390C-0079-1290-8E81	198	198	0	6.5	-59	
64	E200-3000-390C-0078-1020-AE8A	147	147	0	4.8	-62	
65	E200-3000-390C-0079-1190-9DAB	188	188	0	6.2	-62	
66	E200-3000-390C-0079-1670-695B	197	197	0	6.5	-59	
67	E200-3000-390C-0079-0440-E2C0	197	197	0	6.5	-51	
68	E200-3000-390C-0079-1270-950B	195	195	0	6.4	-64	
69	E200-3000-390C-0079-1770-5A29	128	128	0	4.2	-68	
70	E200-3000-390C-0079-0790-C673	188	188	0	6.3	-59	
71	E200-3000-390C-0078-1270-950F	9	9	0	0.3	-64	

Inventory run stopped | Tag History 13451 Filter Off | Trigg Off | Reader 1: Controlling | Reader 2: Not configured | 11:10:35 AM

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Configure Settings | Exit | **START Inventory Run** | CLEAR Inventory

Inventory Statistics **Rate**

Unique Tags: **71**
Tags Rdr1: **71**
Tags Rdr2: **0**
Total Reads: **13445** **438.5**
Tot Rdr1: **13445**
Tot Rdr2: **0**
Test Time: **0:00:30**
Peak Rate: **508.5**

Rdr1 GPI: Rdr2 GPI:
Rdr1 Ant: Rdr2 Ant: Check Ant

200 pcs tags identify 30 seconds

UHF RFID Reader Demo v3.62

读写器设置 | 18000-6C标签测试 | ISO 18000-6B标签测试 | 串口监控数据

盘存标签 (实时模式) | 盘存标签 (缓存模式) | 快速4天线盘存 | 存取标签

开始盘存 | 当前天线: 1 | ☐ 快速4天线盘存 | Session ID: 30 | Inventoried Flag: A

选择天线: ☒ 天线1 | ☐ 天线2 | ☐ 天线3 | ☐ 天线4

数据: 已盘存的标签总数量 (个): 170

Min RSSI: -113dBm | Max RSSI: -57dBm

ID	EPC	PC	识别次数	RSSI	载波频率
157	E2 00 83 19 19 02 01 84 24 40 1C 52	30 00	15	-61 dBm	918.00
158	E2 00 30 00 39 0C 00 81 14 50 7B 11	30 00	6	-69 dBm	918.00
159	E2 00 83 19 19 02 01 84 26 60 0D 2C	30 00	7	-92 dBm	924.50
160	E2 00 30 00 39 0C 00 79 17 60 60 AC	30 00	22	-90 dBm	917.00
161	E2 00 83 19 19 02 01 84 08 20 C6 6C	30 00	18	-69 dBm	908.50
162	E2 00 30 00 39 0C 00 79 05 60 DB BC	30 00	22	-64 dBm	917.00
163	E2 00 30 00 39 0C 00 81 18 00 5A 34	30 00	14	-65 dBm	916.00
164	E2 00 30 00 39 0C 00 79 08 10 C0 69	30 00	22	-64 dBm	917.00
165	E2 00 83 19 19 02 01 84 14 60 7E 66	30 00	7	-90 dBm	904.50
166	E2 00 30 00 39 0C 00 79 08 00 C6 74	30 00	1	-92 dBm	906.00
167	E2 00 83 19 19 02 01 84 03 40 EE 18	30 00	6	-69 dBm	904.50
168	E2 00 83 19 19 02 01 84 05 90 D8 D5	30 00	1	-65 dBm	920.00
169	E2 00 30 00 39 0C 00 79 17 80 5A 2A	30 00	1	-90 dBm	924.50
170	E2 00 30 00 39 0C 00 79 07 90 C6 73	30 00	1	-65 dBm	909.00

操作记录: ☒ 自动清空 | ☐ 打开串口监控

2014-1-24 11:27:27 实时盘存
2014-1-24 11:27:28 设置工作天线成功, 当前工作天线: 天线1
2014-1-24 11:27:30 实时盘存
2014-1-24 11:27:30 设置工作天线成功, 当前工作天线: 天线1
2014-1-24 11:27:32 实时盘存
2014-1-24 11:27:32 设置工作天线成功, 当前工作天线: 天线1
2014-1-24 11:27:35 实时盘存

MultiReader for Speedway Gen2 RFID - v6.6.1.240 [RS_DefaultSettings.cfg]

File Edit Settings Help

INVENTORY RUN MODE

#	EPC VALUE	TotCnt	RD1Cnt	RD2Cnt	RDRate	RSImx	R
129	E200-8319-1902-0184-1460-820C	44	44	0	1.7	-66	
130	E200-3000-390C-0078-0770-C675	37	37	0	1.4	-65	
131	E200-3000-390C-0082-1910-4F87	6	6	0	0.2	-71	
132	E200-3000-390C-0078-1120-A630	32	32	0	1.4	-66	
133	E200-3000-390C-0079-0950-B6B7	12	12	0	0.7	-73	
134	E200-3000-390C-0078-0870-BEBB	14	14	0	0.5	-70	
135	E200-8319-1902-0184-2660-0D2C	7	7	0	0.4	-68	
136	E200-3000-390C-0082-1920-4F88	3	3	0	0.2	-63	
137	E200-3000-390C-0079-1290-8E81	52	52	0	2.0	-57	
138	E200-3000-390C-0082-1760-60A0	24	24	0	0.9	-65	
139	E200-3000-390C-0078-1050-A825	31	31	0	1.2	-66	
140	E200-3000-390C-0079-1780-5A2A	7	7	0	0.4	-73	
141	E200-3000-390C-0079-0800-C674	11	11	0	0.4	-74	
142	E200-3000-390C-0079-1440-83A0	14	14	0	0.6	-70	
143	E200-8319-1902-0184-0820-C66C	3	3	0	0.2	-71	
144	E200-8319-1902-0183-2640-15D8	1	1	0	0.0	-66	
145	E200-3000-390C-0081-2310-2803	3	3	0	0.9	-74	

Inventory run stopped | Tag History 12434 Filter Off | Trigg Off | Reader 1: Controlling | Reader 2: Not configured | 11:21:41 AM

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Configure Settings | Exit | **START Inventory Run** | CLEAR Inventory

Inventory Statistics **Rate**

Unique Tags: 145
Tags Rdr1: 145
Tags Rdr2: 0
Total Reads: 12429 408.4
Tot Rdr1: 12429
Tot Rdr2: 0
Test Time: 0:00:30
Peak Rate: 542.0

Rdr1 GPI: ☒ ☒ ☒ ☒ Rdr2 GPI: ☐ ☐ ☐ ☐
Rdr1 Ant: ☒ ☒ ☒ ☒ Rdr2 Ant: ☐ ☐ ☐ ☐ Check Ant

700 PCS tags identify 27 seconds

