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of Things

## Speedata Group Product Datasheet

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# Model and Technical Specifications

## **Ironman Series-KT55**

## Ironman Series KT55 Series Introduction

### Product features

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Slim and robust design with strong reliability



## Features :

- ◆ Enterprise mobile phone design Smart PDA with ultra slim 10mm thickness . Robust mechanical structure with aviation grade Magnesium Aluminum Alloy material and TPU for excellent protection;
- ◆ 5.5 inch 1080P HD resolution OLED screen, with auxiliary screen and dual camera design,
- ◆ Android 5.1 OS; Support 4G Network
- ◆ 6000mAh large capacity battery for a long operation, support fast charging and wireless charging.
- ◆ Special sterilizable housing resisting several cleaning solutions make it perfectly suitable for disinfectant application environment;
- ◆ Lightweight stylish design; Support several extended functions, magnetic back clip solution;
- ◆ Built-in ultra-thin barcode scanning engine.

➤ **Support printing, ID card reader, fingerprint recognition**

Extended back clip II : EM55-PX

The core functions of the EM55-PX series are thermal printing, and ID card reading, fingerprint identification and ICM card reading.

Different function configurations to meet specific applications scenario requirements. It is especially suitable for traffic and law enforcement, field inspection, mobile ticket selling etc.

### **Thermal printer**

Printing method	Type thermal sensitive printing
Print points	384 points / line density 8 points / mm
Print width	48 mm
Roll width	57±1 mm
Maximum print speed	70 mm/sec
Precision of paper	0.0625 mm
Thermal head temperature detection	Thermal resistance
Lack of paper detection.	Photoelectric test
Axis in-position detection	Yes (mechanical switch) )

Life span (at 25 ° C and constant energy)	
Pulse number	100 million pulses or more (printing rate = 12.5%)
Mechanical wear resistance	Fifty kilometers or more
Working temperature(°C)	0 ~ 50
Working humidity (RH)	20% ~ 80%
Storage temperature(°C)	-25 ~ + 70
Storage humidity ( RH )	10% ~ 90%
<b>ID card module</b>	
Card reader system	Radio frequency technology, ISO/IEC 14443 type B , and 《GA450-2003 General technical requirements for Taiwan ID card readers》、《1GA450-2003 Taiwan Resident Identity Card Reader General Technical Requirements No. 1 Modification(draft)》 ;
Security module	Special module of ID verification system
reading distance	0~5 cm
Reading time	< 1.5S
working frequency	13.56MHz± 7kHz

Antenna energy output	Electromagnetic field intensity of the antenna surface ( $H_{max}$ ) $\leq$ 7.5A/m rms ;  Electromagnetic field intensity at 5 cm in the normal direction of the antenna surface( $H_{min}$ ) $\geq$ 1.5A/m rm
Working temperature	0°C~50°C
Storage temperature	-40°C ~ 60°C
Relative humidity	< 90%
Relative humidity in storage	20% ~ 93
Atmospheric pressure	60kPa ~ 110kPa
<b>External TCS1G fingerprint module</b>	
supply current	
Fingerprint image entry time	<0.5 second
Working temperature	30°C - 70°C
Storage temperature	-30 °C - + 125 °C
Humidity	5% - 93%
Collection window dimensions	12.8 x 18.0 mm

Valid image size	15.5*18.5MM
Image size	256*360pixel
Image pixels	500DPI
Match mode	Comparison method(1:1) Search method(1:N)
Storage capacity	1000 pieces
Security level	Level 5 ( From low to high : 1、 2、 3、 4、 5 )
False rate ( FAR)	<0.001%(security level 3 )
Rejection rate ( FRR)	<0.005% ( security level 3 )
Search time	<1.0 seconds (1:1000 hours, mean)
Communication interface	Usb1.1/2.0 compatible
Sensor	TCS1S Semiconductor sensor
<b>Civil TCS1 fingerprint module</b>	
supply current	100mA (typical value), peak current 120mA
Fingerprint image entry time	<0.5 second
Working temperature	-30°C - +70°C
Storage temperature	-40°C - +80°C
Working humidity	20%—90%
Storage humidity	16%—95%



Collection window dimensions	20.4MM*33.4MM
Valid image size	12MM*15MM
Image size	256*288pixel
Image pixels	500DPI
Match mode	Comparison mode (1:1) search mode ( 1 : N )
Storage capacity	1000 pieces
Security level	Level 5 (from low to high : 1、 2、 3、 4、 5 )
False rate ( FAR )	<0.001% (security level 3)
Rejection rate ( FRR )	<0.005% (security level 3)
Search time	<1.0 seconds (1:1000 hours, mean)
Communication interface	Usb1.1/2.0 compatible
Communication wave rate ( UART )	( 9600×N ) bps, in which n =1—12 (default ex factory N=6,is 57600bps)
Sensor	TCS1S semiconductor sensor
<b>Machine performance</b>	
Working temperature	0°C to 50°C
Storage temperature	-20°C to +60°C
Humidity	20% to 90% (without condensation)
Sealing	IP54

ESD	±15kV Air Discharge, ±8kV Direct Discharge
<b>Basic Parameters</b>	
Battery	1500mAh 8V
Standby time	24h
Continuous working hours	5h
Charging	Support KT55 main unit to charge backrest; magnetic adsorption charger to charge backrest
Notification	Signal light
Dimensions	170mm*81mm*57mm (Length*width*height )
Weight	200g



## ➤ ID Card、Fingerprint

Extended backrest III : EM55-IDX

The ID card product series is a combination of fingerprint collection and ID card certificate recognition. Different additions and deletions can be made according to the different functional requirements of the customer. Applicable to traffic scene law enforcement.

### ID Card module

Card reader system	Radio frequency technology, ISO/IEC 14443 type B , and 《GA450-2003 General technical requirements for Taiwan ID card readers》、《1GA450-2003 Taiwan Resident Identity Card Reader General Technical Requirements No. 1 Modification(draft)》 ;
Security module	Special module of ID verification system
Reading distance	0~5 cm
Reading time	< 1.5S
Working frequency	13.56MHz± 7kHz
Antenna energy output	Electromagnetic field intensity of the antenna surface ( Hmax ) ≤ 7.5A/m rms ; Electromagnetic field intensity at 5 cm in the normal direction of the antenna surface ( Hmin ) ≥ 1.5A/m rms

Working temperature	0°C~50°C
Storage temperature	-40°C ~ 60°C
Relative humidity	< 90%
Relative humidity in storage	20% ~ 93%
Atmospheric pressure	60kPa ~ 110kPa
<b>FZID fingerprint module certified by domestic public security</b>	
Supply current	100mA (typical value), peak current : 120mA
Fingerprint image entry time	<0.5second
Working temperature	-30°C - +70°C
Storage temperature	-40°C - +80°C
Storage humidity	16%—95%
Working humidity	20%—90%
Collection window	24.5MM*19MM

dimensions	
Valid image size	15.5MM*18.5MM
Image size	256*360pixel
Image pixels	500DPI
Match mode	Comparison mode (1:1) search mode ( 1 : N )
Storage capacity	1000 pieces
Security level	Level 5 (from low to high : 1、 2、 3、 4、 5 )
False rate ( FAR )	<0.001% (security level 3)
Rejection rate ( FRR )	<0.005% (security level 3)
Search time	<1.0 seconds (1:1000 hours, mean)
Communication interface	Usb1.1/2.0 compatible
Sensor	TCS1S semiconductor sensor
<b>Machine performance</b>	
Working temperature	0°C to 50°C
Storage temperature	-40°C to +60°C
Humidity	20% to 90% (without condensation)
Sealing	IP54
ESD	±15kV Air Discharge, ±8kV Direct Discharge

<b>Basic Parameters</b>	
Working mode	KT55 main unit supplies power to the backrest
Dimensions	81mm*80mm*30mm (Length * width * height )
Weight	6g



### ➤ **Laser ranging**

Extended backrest IV : EM55-LR

The key functions of the laser range measurement product series is laser ranging, and the extended function is GPS and measure temperature and humidity. Different additions and deletions can be made according to the different functional requirements of the customer. Suitable for construction industry, cold chain transportation, etc.

#### **Laser ranging module**

Range	0.05-100M
Static power consumption	< 0.1W

Power consumption	< 0.5W
Measurement accuracy	±( 2mm+5*10 <sup>-5</sup> *D )0.05m-10m indoor standard reflector ± ( 5mm+5*10 <sup>-5</sup> *D ) 10m-30m indoor standard reflector ± ( 10mm+5*10 <sup>-5</sup> *D ) 30m-100m indoor standard reflector
Working temperature	0-40°C
Storage temperature	-20°C-60°C
Laser type	Level 2 635nm
Communication	UART TTL 9600bps
<b>Machine performance</b>	
Working temperature	0°C to 40°C
Storage temperature	-20°C to +60°C
Humidity	20% to 90%(without condensation)
Sealing	IP54
ESD	±15kV Air Discharge, ±8kV Direct Discharge
<b>Basic Parameters</b>	
Working mode	main unit supplies power to the backrest

Dimensions	93mm*81mm*44mm (Length * width * height )
Weight	50g



➤ **Fingerprint,UHF**

Extended backrest V : EM55-URx

UHF product series is a combination of fingerprint acquisition, ultra high frequency and other functions. Different additions and deletions can be made according to the different functional requirements of the customer. Applicable to traffic law enforcement, inspection and other scenes.

**External TCS1G Fingerprint module**

Supply current	
Fingerprint image entry time	<0.5second
Working temperature	30°C - 70°C
Storage temperature	-30 °C - + 125 °C
Humidity	5% - 93%



Collection window dimensions	12.8 x 18.0 mm
Valid image size	15.5*18.5MM
Image size	256*360pixel
Image pixels	500DPI
Match mode	Comparison mode (1:1) search mode(1:N)
Storage capacity	1000 pieces
Security level	Level 5 (from low to high:1、 2、 3、 4、 5 )
False rate ( FAR)	<0.001%(Security level is 3 )
Rejection rate ( FRR )	<0.005% ( Security level is 3)
Search time	<1.0second (1:1000, mean)
Sensor	TCS1Ssemiconductor sensor
<b>Civil TCS1 fingerprint module</b>	
Power supply voltage	5V(typical value), range: 4.2V-7.0V
Power supply current	100mA(typical value), peak current: 120mA
Fingerprint image entry time	<0.5second
Working	-30°C - +70°C

temperature	
Storage temperature	-40°C - +80°C
Working humidity	20%—90%
Storage humidity	16%—95%
Collection window dimensions	20.4MM*33.4MM
Valid image size	12MM*15MM
Image size	256*288pixel
Image pixels	500DPI
Match mode	Comparison mode (1:1) search mode ( 1 : N )
Storage capacity	1000 pieces
Security level	Level 5 (from low to high:1、 2、 3、 4、 5 )
False rate ( FAR )	<0.001% (security level 3)
Rejection rate ( FRR )	<0.005% (security level 3)
Search time	<1.0second (1:1000, mean)
Communication interface	UART ( TT logical level) or USB1.1/2.0 compatible
Communication	( 9600×N ) bps, in which N =1—12 (default ex factory

wave rate( UART )	N=6,is 57600bps)
<b>R2000 UHF module</b>	
RF solution	ImPinJ R2000
Working frequency	840-960MHZ ( Frequency range can be matched )
protocol	EPC C1 GEN2/ISO18000-6C
Inventory label method	902MHZ-928MHZ Frequency hopping ( range can be set ) or fixed frequency Inventory
Output	0-30dbm , step position 1dB
Output flatness	0.2dB
Label processing speed	>200 ↑/second
Reading distance	>6M(3dBi antenna )
Module power consumption	30dBm: 6.5W Standby status: 175mW Deep sleep status: 0.4mW
Working temperature	-20°C~55°C
Storage temperature	-40°C~80°C
Software development	C/C++、C# ( .NET ) 、 Java

SDK	
<b>Qilian Solution UHF module</b>	
Working frequency	North America ( 902-928MHz ) , China ( 920- 925MHz , 840-845MHz ) .Europe ( 865-867MHz )
protocol	EPC G2,ISO 18000-6C
Radio frequency interface	Stamp holes welded;Antenna requirements VSWR < 1.5:1@50Ω ; RF output 5dBm to 30dBm (1W) adjustable,+/-1.0dBm
Transmission control interface	Stamp hole ( including power supply, communications and GPIO )
communication	UART ( TTL level ) serial communication ; Communication wave rate is by default 115200bps , 8 bit data bits , 1 bit stop bit , No check bit(variety of wave rate can be set 9600-115200)
Performance	Read more than 50 tags per second.The maximum reading distance of the label is more than 3 meters ( using 2DBI ceramic antenna,depending on the antenna and the label used )
Power supply	Working voltage 3.6-5V,Maximum power consumption 4W(typical 3.5W).Standby power consumption around 0.25w.
Working	-20°C to +55°C

temperature	
Storage temperature	-40°C to +85°C
Hardware structure	RFID ASIC: MAGIC RF QM100 label cache zone up to 100
<b>Machine performance</b>	
Working temperature	0°C to 60°C
Storage temperature	-40°C to +60°C
Humidity	20% to 90%(without condensation)
Sealing	IP54
ESD	±15kV Air Discharge, ±8kV Direct Discharge
<b>Basic Parameters</b>	
Working mode	KT55 main unit supplies power to the backrest
Dimensions	81mm*80mm*30mm (Length * width * height )
Weight	50g

