

# PDA 19000



**Rugged & Professional  
Smartphone**



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# PDA 19000



**Built-in 1D Barcode Scanner**



**Built-in 2D Barcode Scanner**



**Non-scanner Version**



**Industrial connector**

**Side buttons**





**Snap-on Multi Gender with USB or with Ethernet  
DC Jack / Ethernet connector / Ear-phone Jack**



**Professional Vehicle cradle with  
RS232 connector  
USB Host connector  
Latch for secure connection**



**Snap-on direct vehicle charger**



**Serial Cable Adaptor & USB Cable Adaptor**

**Desktop Cradle with USB & second battery charger**



**Desktop Cradle with USB & Ethernet (Modem connector optional)**



**4-Slot Ethernet Cradle**



**Standard Battery 1860mAH**



**Extended Battery 4000mAH**



**[Multi Functional Battery]**

- Built-in smartcard reader battery
- Built-in smartcard reader & HF RFID (incl. NFC) battery
- Built-in HF RFID (incl. NFC) battery

**[Common specifications ]**

- Battery Capacity : 3000mAH
- Two SAM slots available located inside of the terminal (optional)
- Each battery requires RP1300 variation version
- Fit to all the standard accessories

**Power Supply**



**Screen Protector**



**Stylus**



**Coiled String for Stylus attachment**



**Holster with Belt Clip**



**Leather Protector with Hand & Shoulder Strap**



**The exact image is not available yet  
(only for reference)**



# 1. Specification

Item	Description	Item	Description
CPU	Samsung S5PV210 1GHz	Communication Interface	USB HOST 2.0 Full speed USB Client 2.0 High speed Ext. Serial RS232C
OS	Windows®Embedded Handheld 6.5.3 (Android 4.1.2 optional)		
Memory	256MB SDRAM (512MB optional) 1GB ROM		
Dimensions	139mm H X 73mm W X 21mm D	Audio	Speaker / Receiver / MIC
Weight	260 gram with 1860mAH battery 310 gram with 4000mAH battery	Wireless (WWAN)	GSM / GPRS / EDEG : Quad band 850/900/1800/1900 MHz UMTS / HSPA+ : Five band 800/850/900/1900/2100 MHz
Display	4.3 inch. WVGA Registive touch (Capacitive optional)	Wireless LAN	802.11 b/g/n (a/b/g optional)
Input	5 Shortcut Keys	Bluetooth	Bluetooth V2.1 (Intenna, BT Headset support)
Battery	Standard : 1860mA/h Li-Ion Extended : 4000mA/h Li-Ion Built-in backup battery : 200mA/h (polymer)	GPS	Embedded A-GPS (Stand alone)
Expansion Slot	microSD Card	Notification	Vibration and Charging LED, WWAN LED
Sealing	IP64	Camera	5.0M Auto Focus, Flash
Drop Spec.	1.5M drop to concrete, 2 drops per 6 sides	Scanner	1D Laser 2D Imager
Operating Temp. Storage Temp.	-20°C ~ +60°C -30°C ~ +70°C	Accessory	Charging Cable, 1Slot Cradle, Vehicle Cradle

## Performance Characteristics

CPU	Samsung S5PV210 1GHz
OS	Windows®Embedded Handheld 6.5.3 (Android 4.1.2 and WinCE optional)
Memory	256MB SDRAM (512MB optional) 1GB ROM
Communication Interface	USB HOST 2.0 Full speed USB Client 2.0 High speed Ext. Serial RS232C

## Battery(4000mA) Performance

Standby Time	220 hours
Talk Time	10 hours
User Profiles	<p>Outdoor WAN+GPS, 15min/hour voice communication, 10kB transmission every 10 min, and GPS on all time, 10.5 hours of operation.</p> <p>Outdoor Voice, 15 min/hour voice communication, 10.5 hours of operation and 150 hours standby time.</p>

## Physical Characteristics

Dimensions	139mm H X 73mm W X 21mm D
Weight	260g (including standard Battery)
Display	4.3 inch. WVGA
Input	5 Shortcut Keys
Battery	Standard : 1860mA/h Li-ion Extended : 4000mA/h Li-ion Build-in backup battery : 200mA/h (polymer)
Expansion Slot	High capacity micro SD Card
Audio	Speaker / Receiver / MIC
Wireless (WWAN)	GSM / GPRS / EDEG : Quad band 850/900/1800/1900 MHz UMTS / HSPA+ : Five band 800/850/900/1900/2100 MHz
Bluetooth	EDR V2.1 (Intenna, BT Headset support)
Wireless LAN	802.11 b/g/n (a/b/g optional)
GPS	Embedded A-GPS
Notification	Vibration and Charging LED, WWAN LED
Scanner	1D Laser Type, 2D Imager

## User Environment

Sealing

IP64

Drop Spec.

1.5M drop to concrete.  
2 drops per 6 sides

Operating Temp

Main

-20 °C ~ +60 °C

Adapter

10 °C ~ +50 °C

AC Power

Input : AC 100 ~ 240V, 50 ~ 60Hz  
Output : DC +5.0V, 3.5A

Relative Humidity

5% ~ 93%

Used frequency band

GSM / GPRS / EDEG :  
Quad band 850/900/1800/1900 MHz  
UMTS / HSPA+:  
Five band 800/850/900/1900/2100 MHz

## Color Camera

Resolution

5.0 megapixel

Illumination

User controllable flash

Lens:

Auto Focus

## Regulatory

Environmental

RoHS-compliant

Electrical Safety

IEC 60950-1: 2005 (2nd Edition) and/or EN 60950-1:2006

WLAN & Bluetooth

ETSI EN300328:V1.7.1(2006-10)

EDGE/GSM 900/  
DCS 1800

3GPP TS 34.123 GCF approved module  
ETSI EN301 511:V.9.0.2(2003-03)  
ETSI TS 151 010-1 :V7.9.0(2008-04)

HSDPA

ETSI EN 301 908-1&2:V.3.2.1(2007-5)  
3GPP TS 25.102 V8.0.0 (2008-05)

RF Exposure

EN 60950-1: 2006+A11:2009 ,  
EN50360: 2001, EN62209-1: 2006 and  
IEEE1528-2003

EMI/RFI

ETSI EN 301 489-1 V1.8.1(04/2008)  
ETSI EN 301 489-7 V1.3.1(11/2005)  
ETSI EN 301 489-  
V1.3.1(04/2008)  
ETSI EN 301 489-24 V1.4.1(09/2007)

Laser Safety

IEC 60825-1:1993+A1:1997+A2:2001,  
EN 60825-1:1994+A2:2001+A1:2002  
"Safety of Laser products"

## 1D Laser Scanner (IS4813)

Signal Output	Digital, industry standard
Resolution:	5 mil (0.127 mm)
Roll:	42°
Pitch Angle:	68°
Yaw	52°
Light Source	Visible Laser Diode 650 nm
Scan Rate	100 scan lines per second
Sweep Angle	54°minimum
Typical Performance* Narrow Width	5.2 mil 70 mm - 95 mm (2.8" - 3.78") 7.5 mil 57 mm - 171 mm (2.3" - 6.8") 10.4 mil 50 mm - 210 mm (2.0" - 8.3")
Depth of Field	13 mil 50 mm - 254 mm (2.0" - 10.0") 19.5 mil 75 mm - 300 (3.0" - 11.8")
Ambient Light Levels	4842 Lux (450 foot-candles)

\* Performance may be impacted by bar code quality and environmental conditions

## Interactive Sensor Technology

Motion-sensor: 3-axis accelerometer that enables motion-sensing applications for dynamic screen orientation, and Magnetic Field Sensor, power management and free-fall detect.

## 2D Imager Engine (5100SR-110R)

Focal Distance	7 inches (17.8cm) from lens plate
Sensor Resolution	752 x 480 pixels
Image Sensor	752 X 480 CMOS sensor
Motion Tolerance	4 in. (10.2cm) per second
Rotational Sensitivity	360o
Viewing Angle	+40o
Ambient Light Immunity	Total darkness to 100,000 lux (full sunlight)
Illumination LEDs	626nm +30nm
Aiming	LEDs: 526nm +30nm Laser: 650nm +10nm

## Peripherals and Accessories

Communication	USB Client 2.0 HIGH SPEED
Battery Chargers:	1-slot battery charger Cradle Vehicle Chager Cradle 4-slot Charging Cradle
Electrical Safety:	IEC 60950-1: 2005 (2nd Edition) and/or EN 60950-1:2006
EMI/RFI:	EN 55022:2006 Class B EN 61000-3-2:2006 EN 61000-3-3:1995 +A1:2001+A2:2005

## 2. Key Characteristics



real size



### 4.3 " WVGA Display

Large and sensitive touch screen for touch-oriented data entry and sufficient view

Clear view for both indoor & outdoor use

Reinforced touch panel separated from LCD which significantly reduces LCD breakage and RMA cost.

Both Resistive & Capacitive touch available

-Resistive touch with WM and Android OS  
**(signature capture via stylus and free from rain drop)**

- Capacitive touch with Android OS only



## OS Flexibility

WEH 6.5 and the latest Android 4.1.2 Jellybean available

Easy OS migration from WEH to Android

- without any H/W change
- Simple OS change and user can do locally.

***“ Use WEH version first and  
When customer is ready with its own Android  
application, simply change OS to Android.”***

## Industry-leading Rugged Level

- 1.5m (5ft) drop to concrete (2 times each angle, total 12 times)
- IP 64 dust and water sealing
- -20 ~+60°C Operating temperature



### Built-in Antenna

- Anti-shock design
- Highly sensitive & reliable

### Dedicated speaker for voice telephony (GSM and VoIP)

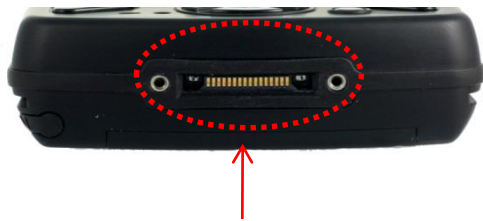
### Reinforced touch screen & Scratch-resistant

- sensitive touch screen but ultra-rugged
- separately designed between touch panel and LCD module
- significant drop of LCD RMA rate and low RMA cost (1/5 of LCD replacement)
- in statistics, LCD accounts for nearly 50% of RMA cases but it will drop significantly due to the special design

# *“Truly Professional Construction”*

## Magnesium Protection Frame

Protection Rubber  
Against shock and  
Water & dust intrusion



**Industrial connector**

- rugged & water-proof charging, USB H/C, RS232C







**Powerful 1GHZ Processor**

**High Capacity Speaker**

- For navigation and speaker phone

**STD. 1860 / EXT. 4000mA/h Battery**

- longer than 10 hours autonomy
- Lithium-ion
- many of power-saving functions

**Built-in Backup Battery**

- 200mA/h
- no need to reboot for main battery change
- data saving for 7days without main battery

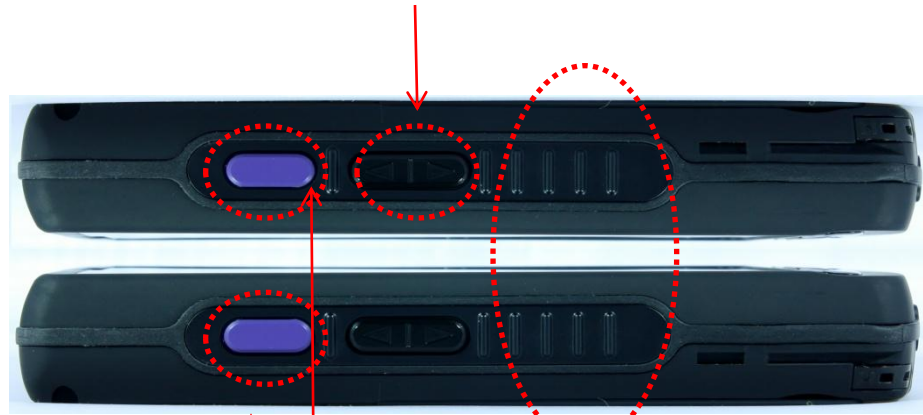
**Micro SD card slot**

- up to 32Giga byte





Extra function key for multi purposes



Ergonomic & Slim grip area

Side-scan keys both for light & left handed

*Front and side Keys are re-assignable for customer 's own purposes*

Convenient keypads preventing erratic press

Power button & Charging indicator

## Functionalities

### WWAN / WLAN / WPN / GPS

#### 3.8G HSPA+

- high Speed & reliable data exchange
- high quality of voice telephony  
by superior antenna sensibility and system noise filtering technology  
(eliminating need of dedicated cell phone / reducing the tools needed by a mobile worker)
- voice call & data exchange simultaneously

#### WIFI

- 802.11b/g/n certified (a/b/g optional)
- high-level of security (WPA1 WPA2.....)
- variety of application support
- Cost-effective voice and data connectivity
- speedy inter-roaming (virtually no disconnection)

## Bluetooth

- version 2.1 class2 EDR
- wireless connection to printer, audio headset, modem and variety of peripherals

## A-GPS

- faster and accurate positioning information (within 3meter accuracy) especially in challenging area
- real-sizable **ceramic antenna** provides outstanding sensitivity and accuracy



## Easy & Cost-effective Device Management

- Compatible with most common 3<sup>rd</sup> party remote device management solutions (Soti and Softogo certified)

## Automatic Data Collection



### Accurate & Speedy Barcode scanning

- 1D : Laser type
- 2D : Imager
- various SDK support for speedy processing and transmission of the scanner data



### Industry leading Color Camera

- 5 Megapixel
- autofocus & LED flash
- high quality image capture from landscape to full-page document
- various SDK support for easy integration of image data into the application

## Contact-type Smart Card Reader (Optional)

<b>Standards Supported</b>	<b>ISO7816-3</b>
	<b>EMV2000 LEVEL-1</b>

	DESCRIPTION	REMARK
IC Driver	CR30	gemalto
Supported smart cards	Asynchronous	Microprocessor cards T=0, T=1 protocols Transmission rate: up to 826Kbps (TA1=17@CK=4.8MHz)
	Synchronous	Through the Command Interpreter
Smart Card Interface	Smart card power supply	5V and 3V and 1.8V Short circuit current limitation Power up/ Power down control sequences
	Smart card management	Card insertion/extraction detection
	ESD protection on card I/O	8KV contact
Serial host interface	Serial asynchronous link	UART, TTL Level(+3.3V) 9600bps~115200bps Format: 8bits, no parity
	Communication protocol	CCID V1.0 on serial TTL link
USB host interface	USB2.0 compliant	CCID V1.1 Full speed 12Mbps, hub-less Multi-slot driver for Windows
Ambient operating Temperature	-10 °C to +50 °C	



## Contactless HF RFID Reader (Optional)

	DESCRIPTION	REMARK
CPU	ARM Coretex-m3 Core – 72MHz	
Memory	Internal Flash 384KB, Internal RAM 64KB	
RF Driver	RC663	NXP
RF Driver Power supply	+5V ± 2%	
RF Power current	100mA~150mA	+5V
Serial host Interface	- Default Baud Rate : 9,600[bps] - MAX Baud Rate : 115,200[bps]	UART, TTL Level(+3.3V) Format: 8bits, no parity
RF Card Interface	- Operating frequency: 13.56MHz - Full ISO 14443 -1 to -4 compliant - Baud rate: 106Kbps to 848Kbps	ISO 14443 A Card Support ISO 14443 B Card Support Mifare Card Support
Ambient operating Temperature	-10 °C to +50 °C	

with 3000mAH battery

## Powerful reading performance (through your hand)



2 SAM slots

[Remark]  
smartcard & HF RFID reader simultaneously available