Safety Assessment Report: 3-in-1 Acquisition Tool

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Revision 0, July 5, 2011

1. Introduction: The 3-in-1 Acquisition Tool (3-in-1) consists of a BlueBird Pideon BIP-6000 Personal Digital Assistant (PDA) and portable printer, Printek FieldPro RT43. This device interfaces to an acquisition database for the purposes of processing field ordering, receipt and payment processes. Additional information concerning the functions of this system can be found in annex 1.

Pertinent observations for the hazard analysis are noted as follows. Both devices are battery operated. Power connectivity is provided by 120 VAC (nominal, actual range is 100-240 VAC) or 12/24 VDC power supplies with different connectors precluding voltage mismatch. Communications connectivity for the PDA can occur through Universal Serial Bus (USB) or RS-232 wired connection or through wireless means (802.11, Wi-Fi.) Although the BIP-6000 is Bluetooth-capable, this function is disabled. PDA-to-printer connectivity is achieved through hard wire connection only. The PDA has a Class-2 laser in a barcode scanner. Specification sheets for the BIP-6000 PDA and the Printek FieldPro RT43 (Series 400) are attached at annexes 2 and 3, respectively.

2. Hazard Analysis: I conducted a detailed review of manufacturer literature with the following results.

a. Electrical Hazards:

1) The PDA and printers are battery-operated, low voltage devices. 120 VAC is only used with listed chargers. Appropriate instructions were found in user manuals for the equipment.

2) I conclude that any electrical hazards are controlled through use of customary means for compliance to applicable industry standards.

3) These devices are not rated for use in an explosive dust/gas environment.

b. Mechanical/Lifting/Other: The 3-in-1 components weigh less than 1.5 lbs. each, have no sharp edges, entrapment hazards, etc. I conclude there are no mechanical hazards.

c. Non-ionizing radiation:

1) Hazards of Electromagnetic Radiation to Personnel (HERP): 3-in-1 PDA does not emit radiation above permitted Maximum Permissible Exposure (MPE) limit for its frequency, meeting Federal Communications Commission (FCC) limits and meeting DODI 6055-11 limits. User manuals caution to avoid contact with the antenna assembly if the PDA plastic housing is damaged.

2) Hazards of Electromagnetic Radiation to Fuel (HERF): No hazard. PDA emitter is far below the intensity needed for a HERF issue to exist with any type of fuel.

3) Hazards of Electromagnetic Radiation to Ordnance (HERO): Calculation IAW NAVSEA OP3565 (Electromagnetic Radiation Hazards) reveals:

a) Range to HERO Unsafe: 3.0 meters.
b) Range to HERO Susceptible: 1.5 meters.

While control of HERO hazards is an ordnance responsibility, this information is published and used to deconflict possible HERO issues if the equipment is intended for use in an environment where ordnance is stored, maintained or used. Small arms and percussion-initiated ammunition is not HERO sensitive.

4) Laser radiation: The PDA has a Class 2 laser in a barcode scanner. Class 2 is considered safe for use without controls. Adequate instructions and cautions are found in the vendor supplied manuals.

d. Health Hazards:

1) Acoustic noise: No significant acoustic noise emission. The PDA is earphone capable. Operators are instructed to use minimal volume necessary to ensure acoustic noise remains below safe limits.

2) Chemical: No chemical emissions.

e. Temperature hazards:

1) No skin contact temperature/burn hazard.

2) Vendor documentation for the RT43 printer instructs to keep vents clear otherwise the printer can overheat. I note that this instruction appears as an equipment performance warning rather than a safety concern.

f. Battery hazards:

1) Both the PDA and printer use Li-ion batteries. Review of the user manuals reveal terminal transposition or other incorrect installation cannot occur, precluding a polarity reversal hazard. Incorrect voltage presentation to the batteries is precluded by different DC connectors and through operating instructions.

2) Users must ensure disposal of Li-ion batteries used with the equipment IAW recognized procedures (e.g., recycling.)

3) Vendor manuals provide comprehensive instructions to preclude battery hazards.

g. Software hazards: 3-in-1 software controls nor influences any hazardous processes, firing controls, fire decision support processes or life safety equipment. I conclude there are no software safety issues or hazards with this equipment.

3. Conclusion: 3-in1 equipment and operating hazards are controlled or mitigated in accordance with reasonable and customary measures, complying with the best industry practices found in similar equipment in accordance with the appropriate industry standards. Use of the equipment for military application is identical to the intended use of the equipment. With the expectation that operators will observe the safety instructions in the vendor documentation, the 3-in1 can safety proceed to fielding.

4. Recommendations:

1) Ensure operators read and understand the safety instructions in the vendor documentation before using the equipment.

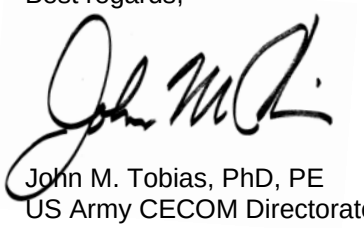
2) Ensure operators minimize volume if earphones are used.

3) Only use 120 VAC chargers in dry environments, in accordance with product listings and instructions.

4) Preclude use of 3-in-1 in explosive gas/dust environments.

I invite and welcome any questions or discussion on this matter.

Best regards,



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Annex 1: 3-in1 Tool Brochure
Annex 2: BIP-6000 Brochure/Specifications
Annex 3: Printek FieldPro Brochure/Specifications

Improvements

- Eliminates illegible paperwork, deciphering handwriting, lost receipts
- Provides immediate visibility of transactions and payments
- Improves data and purchase control
- Eliminates travel for clearing when cash replenishment isn't required
- Eliminates excessive document reproduction, storage, or shipping
- Eliminates redundant data entry
- Enables analysis of orders & expenditures
- Improves cash management and tracking
- Permits daily reconciliation without face to face meetings
- Provides audit trail of all transactions in AOR
- Reduces unmatched disbursements from SF 44 purchases
- Eliminates Duplication of payment risk
- Reduces time and work for procurement, accounting, reconciliation

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Bluebird Pidion BIP 6000- Small (3.1"x 6.3" x 1.4"), light-weight (14.3oz with battery), ruggedized to MIL-STD-810F, 2Gig FIPS **140-2 compliant memory, 3.5" Touch Screen, 3.7V, 4400mAh, Li-ion rechargeable battery, 3 megapixel autofocus camera with LED flash, WiFi, GSM, USB and Ethernet connectivity.**

Printek FieldPro Mobile- Small (6.1" x 5.9" x 2.7"), light-weight (20 oz with battery) ruggedized portable printer used to print an SF-44 on site if required.

3in1 Tool uses the existing of the JCCS database. JCCS is currently in use in JCC I/A for vendor registration, contract solicitation, and contract management and tracking at some locations. Servers are housed at DISA with COOP backup.

ORDERING
RECEIVING
PAYMENT
3 Tool

Automating the SF44 Process from End-to-End

Automating a 50 year old paper process

The 3in1 Tool automates the three key processes, Field Order, Receipt, and Payment, in one solution normally accomplished with the Standard Form 44 manual processes to purchase supplies and services used in contingency environments by a Field Ordering Officer (FOO) and Paying Agent (PA). The 3in1 Tool will record and transmit cash and carry type purchases and payment data when conducting on-the-spot, over-the-counter, field cash purchases where GPC use is not feasible. The 3in1 Tool is a joint procurement and financial solution developed to reduce risk to the field team, improve procurement and cash management on the battlefield, and provides immediate visibility into purchases/payments.

The 3in1 Tool is comprised of three components, a ruggedized handheld device with portable printer, a workstation application, and a prime database/server. The handheld device is used in the field to input, temporarily store, and then transmit purchase and payment information. The workstation application is a hard client application that transmits data to the prime database/server. The prime database/server, a specialized module within the Joint Contingency Contracting System (JCCS), a existing system used to manage and post contracts and track contractors housed at DISA (DECC). The 3in1 prime database is used to manage devices and role based system access; stores, reports, and analyzes purchase and payment data; and transmits payment/information to other financial systems and order/voucher and receipt images for official document storage to Electronic Data Access (EDA).

FROM THIS...

...TO THIS!

Current Process

- Hand write SF44
- Type SF44 data into PIIN Log
- Make 5 Copies of all documents
- Travel to PBO, DA, KO, RM to Clear
- DA enter SF44 in DDS
- DA updates manual PR ledger
- DA scans SF44 for archive
- Hardcopy shipped to CONUS
- KO maintains file
- FOO maintains file
- PA maintains file
- DA maintains file

Problems

- Illegibility SF44/Receipts
- Errors: Calculation of order, ledger totals, or exchange rate
- Documents lost or damaged
- Wasted time
  - Duplicate data entry
  - Excessive Paper Reproduction
  - Traveling to Clear
- Lack of oversight/visibility of purchases & cash control from delayed clearing
- Unnecessary Risk due to travel
- Unmatched documents requiring manual tracking
- No Theater-wide visibility

ON/OFF LINE OPERATIONS:

Both the handheld device and the client laptop application of the JCCS 3in1 Module have the ability to continue operation independently and store data until connectivity is restored with the web. This can occur sporadically or at the end of the operation, depending on connectivity and bandwidth. All data is encrypted for maximum security.

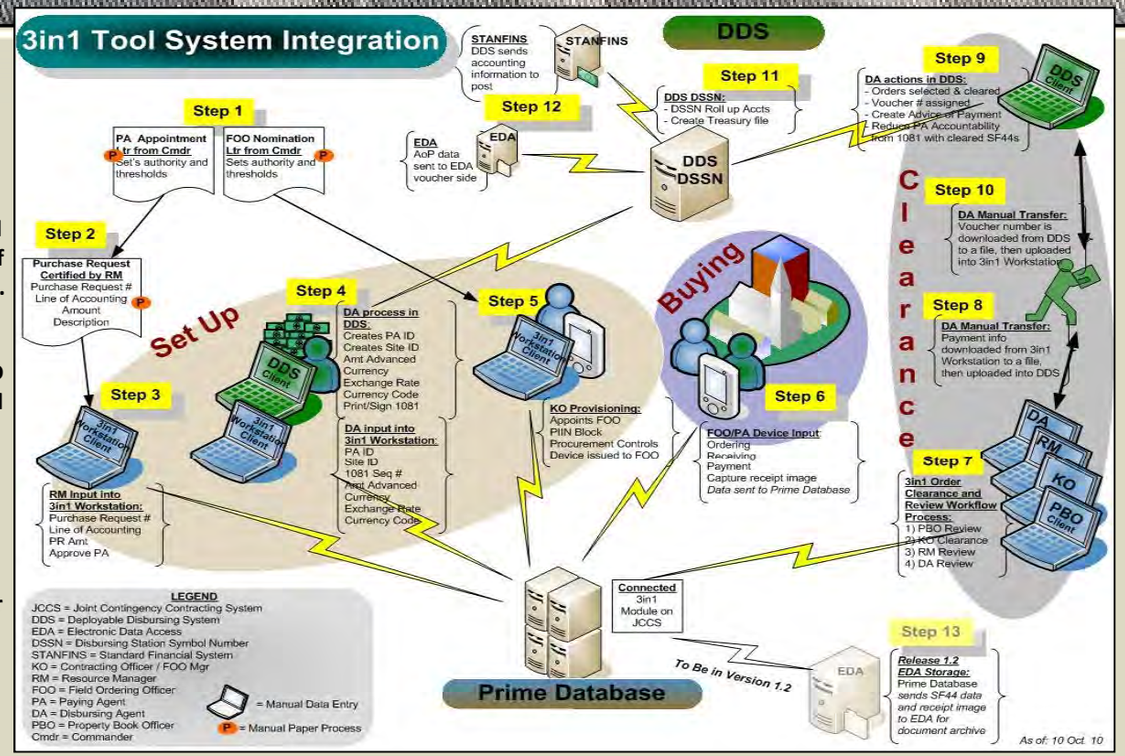
AUTHENTICATION: Users register in JCCS using DoD CAC cards to establish a user ID and strong password and to obtain approval for role based access. Secure digital Signatures are used to execute order and payment transactions. As each step of the purchase is completed, the information is locked and all data and images are transmitted to the JCCS 3in1 Module.

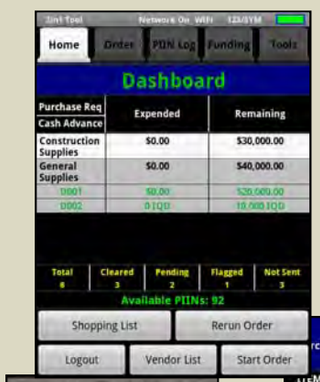
RECEIPT AND RECORD OF PAYMENT: Vendor receipts are digitally recorded with the onboard camera. Government receipt of goods and vendor payment are recorded as a digital image of the physical signature on the device's touch screen.

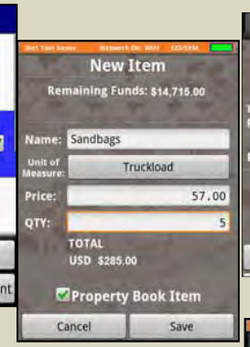
CONTROLS: Procurement controls prohibit purchases in excess of authorized limits or check items against unauthorized lists and display warning messages.

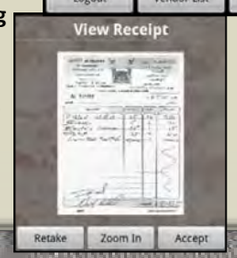
ON-LINE REVIEW: When connected, SF44 information is immediately available for review and clearance. Reviewers may view all information on the SF44 to include any required approval memos from a commander, C6, JA, etc that are attached to that order in the JCCS 3in1 Module. Reviewers can approve, disapprove, or flag an order and transmit a comment to the field team for response on the device.

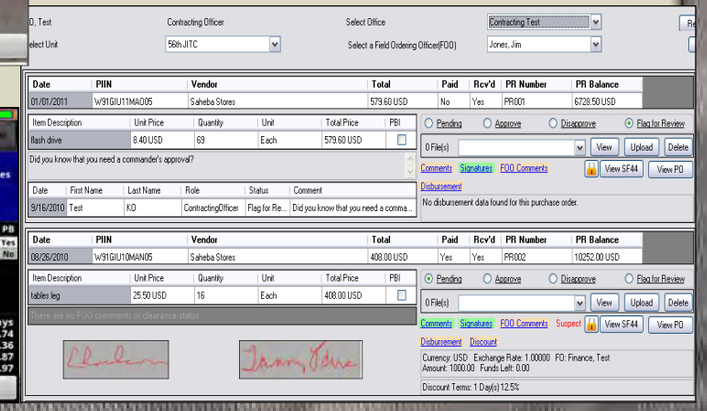
TRANMISSION TO BUSNESS SYSTEMS: Disbursing Agent (DA) transfers the cleared orders electronically to DDS for processing and to reduce the PAs cash accountability. The PA will only need to return to the DA to obtain/return cash.











Features

- All SF44 data captured/recorded/transmitted to JCCS
- Records PR #, Amt, LOA -- ability to track multiple PRs
- Records Cash Disbursement Amt and Exchange Rate
- Digitally records receipt image and link to order
- Calculates order total & currency exchange
- Tracks obligations & available funds
- Online role-based review process (PBO,KO,DA,RM)
  - Information available daily without face-to-face clearing when cash exchange is not required
- Access prices on device for market research
- May record vendor location by GPS coordinates
- Ability to attach notes to orders
- Upload supporting documents for retention in order's electronic file--Approvals, Reviews, Hand Receipts
- Management reporting capabilities on 3in1 Module
  - Track Expenditures, Purchases, Cash in the field, Obligations, Available funds
  - Pre-populate forms: hand receipts for property book
- Push PR & procurement updates to device remotely
- Track expenditures by disbursement/accounting line
- Transmit SF44/receipt to EDA for document retention
- Transfer payment data directly to financial systems
- Create shopping lists to minimize time in the market
- Reports for use by the FOO, FOO Managers, PA, KO, DA, and Cmdr available on JCCS 3in1 Module

Rugged Handheld Computer

BIP-6000Max

pidion

Empowering Mobility

BIP-6000Max

INDUSTRIES

Retail

Public Transport

Hospitality

Healthcare

Finance

KEY FEATURES & BENEFITS

Ultimate Form Factor

IP65, 1.8m Drop, MIL-STD 810F

BIP-6000Max allows working without any restraints of harsh work environment. It meets IP65 sealing requirements, withstands 12 drops at 1.8 m to steel surface and operates in a temperature range of -30℃ to 60℃. In addition, powerful 4,400mAh battery ensures continuous operation for a full day.

Revolutionary Integration

RFID Reader, Barcode Scanner, 3MP Camera

BIP-6000Max gives an ability to manage more data faster. Integrated RFID Reader and 1D / 2D Barcode Scanner enable versatile data capture in a single device. Moreover, 3.0 megapixel autofocus camera with flash supports snapping sharper images from a short distance and under dim light.

Latest Technologies

Windows Mobile 6.1 / 6.5 (optional) / Android (optional)

BIP-6000Max features the full range of latest technologies. 806MHz processor and Windows Mobile 6.1, 6.5 or Android operating system deliver maximum computing power with easy operation and system integration capability. It supports large memory capacity with 256MB RAM 512MB ROM (up to 1GB) and MicroSD slot.

Flexible Communications

HSDPA, WiFi, Bluetooth, A-GPS

BIP-6000Max provides accuracy and speed data capability for improving work efficiency and flexibility. HSDPA, WiFi and Bluetooth enable real-time communications between mobile workers and head office. An integrated A-GPS allows tracking user position and streamlining route plan.

Outstanding Ergonomics

3.5" VGA, TouchWindow LCD, Numeric / QWERTY

The large 3.5" VGA display gives visual and tactile enhancement. Moreover, the crack-resistant TouchWindow LCD supports substantial protection for the touch sensitive display. Additionally, Numeric / QWERTY keypad with backlight enables easy and precise typing in any light level.

Warehousing

Field Force Automation

Logistics

Construction

Government/Public Sector

APPLICATIONS

Parcel Delivery | Meter Reading | Public Safety | Patient/Pharm Tracking | Mobile Ticketing | Fleet Management | Customer Management | Asset Management | Inventory Management | Facility Management

1D Barcode & PDF417
Laser Class II

2D Barcode
CMOS Imager

RFID
Integrated RFID Reader

GPS
Integrated A-GPS

Camera
3.0 megapixel,
Autofocus, Flash

CPU
PXA 320, 806MHz

Memory
256 RAM / 512MB ROM(up to 1GB)

Battery
3.7V, 4,400mAh, Li-ion

Bluetooth
Bluetooth V 2.0+EDR, Class II

BIP-6000Max

SPECIFICATIONS

PHYSICAL CHARACTERISTICS	
DIMENSIONS (W x H x D)	80 x 160 x 35.5mm / 3.1 x 6.9 x 1.4 inch
WEIGHT	Including battery: 407g
DISPLAY	3.5" VGA with backlight, TFT TouchWindow LCD, 260K, 480 x 640 3.5" QVGA with backlight, TFT TouchWindow LCD, 260K, 240 x 320
KEYPAD	Numeric / QWERTY
BATTERY	Rechargeable, 3.7V, 4,400mAh, Li-ion
EXPANSION SLOT	Customer-accessible MicroSD slot for removable memory card up to 8G
SIM/SAM SLOT	1SIM / 1SAM
AUDIO	High Volume speakers, Headset jack
CAMERA	3 megapixel autofocus camera with LED flash / Ultra bright LED flash (optional)
GPS	Integrated GPS with Network Independent A-GPS
G-SENSOR	Integrated G-sensor
PERFORMANCE CHARACTERISTICS	
CPU	PXA 320, 806MHz
OS	Windows Mobile 6.1 / Windows Mobile 6.5 (optional) / Android (optional)
MEMORY	256MB RAM / 512MB ROM (up to 1GB)
INTERFACE	RS-232C, USB 1.1(full-speed) Host & Client, Ethernet via cradle
USER ENVIRONMENT CHARACTERISTICS	
OPERATING TEMP	-30℃ to 60℃ / -22℉ to 140℉, MIL-STD 810F, Method 501.4, Procedure II, Method 502.4, Procedure I,II&III
STORAGE TEMP	-40℃ to 70℃ / -40℉ to 158℉, MIL-STD 810F, Method 501.4, Procedure I, Method 502.4, Procedure I,II&III
TEMP SHOCK	MIL-STD 810F, Method 503.4, Procedure I (-35℃/65℃)
HUMIDITY	95% non-condensing; meets and exceeds MIL-STD 810F, Method 507.4, 90%RH temp cycle 0℃/70℃
DROP	6ft. / 1.8m drop to steel surface, 2 drops per 6 sides; meets and exceeds MIL-STD 810F
SAND AND DUST	IP65, MIL-STD 810F, Method 510.4, Procedures I&II, KWF-test certified
WATER	IP65, MIL-STD 810F, Method 516.5, Procedure IV, KWF-test certified
VIBRATION	MIL-STD 810F, Method 514.5, Procedure I&II
ALTITUDE	MIL-STD 810F, Method 500.4, Procedure I,II&III, 15,000 ft at 23℃/73℉
INTEGRATED RADIO	
WWAN RADIO	GSM/GPRS/eGPRS(850, 900, 1800, 1900MHz) / UMTS/HSDPA(850, 1900, 2100MHz)
WLAN RADIO	IEEE 802.11b/g, IEEE 802.11a/b/g (optional)
WPAN RADIO	Bluetooth V2.0+EDR,Class II , IrDA 1.2
DATA CAPTURE	
BARCODE SCANNER	1D&PDF417 Laser Class II or 1D&2D CMOS Imager
RFID READER	Integrated RFID, ISO 14443 A/B (MIFARE, Calypso), ISO 15693

ACCESSORIES

Cradle | Battery | Protection Film | Adapter | Adapter Connector | USB Cable | Stylus Pen | Tether

* Accessories above come with product.

Bluebird

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BR-F-BIP-6000Max-EN-MAY11-V1

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Features and specifications are subject to change without prior notice.

Detailed Printer Specifications

FieldPro Series

Printing Specifications

Printing Method: Direct thermal

Printing Resolution: 203 dpi (8 dots per mm)

Printing Speed: Up to 2.8 ips

Printing Width: Up to 4.1 inches (10.4 cm)

Fonts/Characters/Bar Codes

Fonts: A wide range of font types and sizes, from ~ 6 cpi to 34 cpi depending on emulation chosen, plus scaling.

International Characters: An expanding catalog available for download.

Bar Codes: 39, 128, Intlv 2 of 5, EAN08 & 13, PDF-417 and UPC, depending on emulation chosen.

Downloadable fonts, graphics, logos and additional bar codes.

Connectivity

Standard (All Units): RS232, USB (optional cable required)

Wireless Options:

- IrDA
- Bluetooth®
  - Complete Bluetooth® 2.0 Stack including:
    - Protocols: L2CAP, RFCOMM, SDP
    - Profiles: GAP, SDAP, SPP
  - Class 2 Operation
  - Bluetooth® SIG QD ID: B012394
  - RFC2217 & EN60601 compliant
- Wi-Fi 802.11b/g compatible

Universal Port: (RJ45 connection) data and power port - allows connection of external devices such as barcode scanners, signature capture pads

Software

Drivers and Utilities: Drivers for WIN 98, 2000, XP, WIN 7, Compatible with Windows CE/Pocket PC, Windows Mobile, Palm OS print utilities and SDK's.

Printer Setup Program provides convenient configuration via a Windows interface from any computer (PDAs and Smartphones included).

Emulations: Emulates many popular printer brands and languages including O'Neil, Zebra CPCL and ZPL, Extech, IPL, MPL, E-Sim and Printek Mt3. Can be upgraded as new emulations become available.

Print Media

Paper Type: Direct Thermal Roll

Roll Size: Maximum roll diameter 1.75" (4.3 cm), roll widths from 2.9" to 4.125" (7.4 to 10.5 cm)

Roll Capacity: Approx. 65' (19.8 m), or approx. 130-6" long receipts (with 2.4 mil thick media), max.

Core Size: 0.75" Recommended (1.9 cm)

Power Management

Battery: Rechargeable 2 cell Lithium Ion, (7.4 V, 2200 mAh)

Endurance: Over 3,500 printed inches per charge.

Recharging: 2 hours, via on-board charger or optional external charger.

Power Option: 100-240 VAC wall adapter, or 12-24 VDC in-vehicle adapter. When plugged in, the printer can be used while recharging the battery or can be run without the battery.

Physical Specifications

L x W x H: 6.1" x 5.9" x 2.7" (15.5 x 15.0 x 6.9 cm)

Weight: 20 ounces (.57 kg) with battery

Environmental Specifications

Operating Temp: -4° to 122°F (-18° to 50°C)

Storage Temp: -4° to 140°F (-20° to 60°C)

Humidity: 10% to 90% RH (non-condensing)

Rated IP54 per IEC 529, without optional environmental case.

Operator Controls and Indicators

3 LED indicators for general fault, wireless connection/power and battery status indication. Buttons for power and paper feed. Sensors for paper out, black mark detection, and door open.

Memory Capacity

2 MB Flash, 1MB SRAM. Standard memory supports large and graphic intensive print jobs.

Durability and Reliability

Survives multiple 4 foot drops to concrete (each face) per IEC 68-2

MTBF: 10,000 hours in normal use

Regulatory Approvals

FCC Class B, CE mark, RoHS, UL listed AC adapters, E-mark on In-Vehicle adapters

Warranty

One-year printer warranty on the entire printer—case, battery, and print head included.

Options and Accessories

- 3-Track Simultaneous Read Magnetic Card Reader, with indicator
- Cabled connection of external devices such as barcode scanners, signature capture pads, and more via Universal Port
- AC Wall Adapter, 100 to 240 VAC
- In-Vehicle Power Adapter, 12 to 24 VDC
- Shoulder Strap
- Hand Strap/Belt Loop Attachments
- Data Cables, RS232 or USB
- Spare Batteries in Multi-Packs
- Media in Case Quantities
- Flexible Mounting Systems
  - In-Vehicle Systems
  - Cart Mounting Systems
  - Fixed Mounting Systems

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