

Note: HMS814 featured
above shown with the
PC2420 Hand-Held Terminal

HMS814 / HMS816 Portable Reader/Writers

Features

- Epoxy Encapsulated
- Unaffected by Paint, Dust, Dirt and Solvents
- Uses Safe, Reliable, Low-Frequency Radio Waves
- Passive Tag Requires No Batteries
- Automatic Program Start-up

Applications

- Material Handling
- Sortation Systems
- Work-in-Progress Monitoring
- Quality Control

Use With

- HMS-Series Tags

EMS, a Datalogic Group Company, is the field-proven leader in the development and application of Radio Frequency Identification (RFID) Tags/Labels/PCBs, Antennas, Controllers and network interface modules for tough industrial environments. With over a dozen years of RFID successes in the automotive, electronics, material handling and food processing industries, EMS has built a global reputation in providing customers with complete supply chain solutions – from production to retail EMS has the complete solution!

EMS has recently teamed up with Intermec to launch an exciting new product line of Portable Reader/Writers. Escort Memory Systems' Read/Write Antenna, the HMS814, can be plugged into Intermec's PC2420-Series Hand-Held Terminals (PC2420 and PC2425) to provide portable Read/Write capabilities. For added flexibility, Escort Memory Systems also offers the HMS816 Reader/Writer, which provides a direct host interface (e.g. laptop, palmtop).

The HMS814 Portable Reader/Writer is a fully encapsulated wand housed in an industrial enclosure and has a cushioned exterior for comfort and shock resistance. The HMS814 plugs into the Intermec Hand-Held Terminal to allow for portable Reading and Writing to the HMS-Series Tags. The HMS814 is powered by the Terminal.

The HMS816 Portable Reader/Writer is unique from the HMS814 in that it interfaces to the host (e.g. laptop, palmtop) via an RS232 serial port. The HMS816 uses an

external power supply, and it features the same rugged characteristics of the HMS814. Included with the HMS816 Reader/Writer is a complete user software guide and a disk with demonstration programs.

Intermec offers two Terminals to interface with Escort Memory Systems' Reader/Writers – the PC2420 and the PC2425. The PC2420 is a powerful micro-computer which features a CGA compatible back-lit LCD displaying 16 lines of 20 characters per line. The PC2420 also has a full alpha-numeric keypad, long battery life, and a rugged design suitable for use in industrial environments. The PC2425 Terminal shares all the above characteristics as the PC2420 but also provides the added benefit of an RF link to the host.

**PASSIVE
READER/
WRITER
IS NOW
PORTABLE**

Technical Description

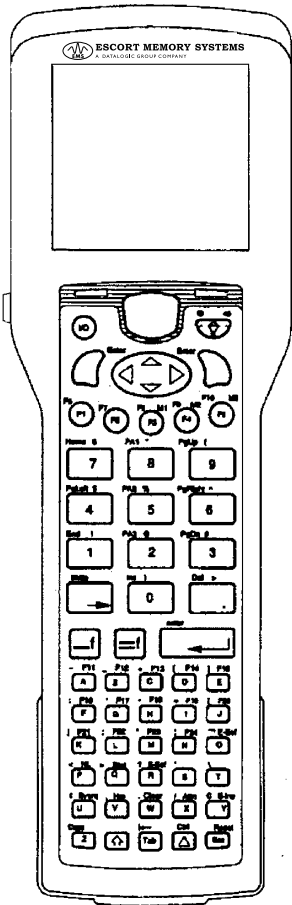
The HMS814 / HMS816 Portable Reader/Writers contains its own microprocessor and memory subsystems to manage communication with the HMS-Series Tags. Communication between the PC2420 (or PC2425) Terminal and the HMS814 is in serial asynchronous form. The RF communications with the Tag is on the internationally recognized ISM frequency of 13.56 MHz.

HMS814 / HMS816 Portable Reader/Writers

PC2420-Series Hand-Held Terminals

| | | |
|---------------------------|--|---------------------------------------|
| Electrical | Supply Voltage | Lithium Ion Battery Pack |
| | Memory Backup | Rechargeable NiCad Battery Pack |
| | RAM Memory | 1 MB Total, 512KB Available |
| | Extended Memory | 2MB SRAM |
| Mechanical Specifications | Dimensions (W x H x D) | 10.6 x 3.2 x 2.8in. (269 x 82 x 71mm) |
| | Weight | 22oz. (620g) Including Battery |
| Environment | Operating Temperature | -4° to 122°F (-20° to 50°C) |
| | Storage Temperature | -4° to 140°F (-20° to 60°C) |
| | Humidity | 95% Non-Condensing |
| Display | CGA Compatible Backlit LCD Displaying | |
| | 16 Lines of 20 Characters Per Line (160 x 128 Dot Matrix) Plus Graphic Status Icons Full 25 x 80 Virtual Screen with Viewporting | |
| Keyboard | Elastomeric 56-key with Full Alphanumeric Set, | |
| | Function Keys and Oversized Numeric. Options for U.S. and Multilingual European | |

PC2420-Series Hand-Held Terminals



HMS814 / HMS816 Portable Reader/Writers

HMS814 Portable Reader/Writer

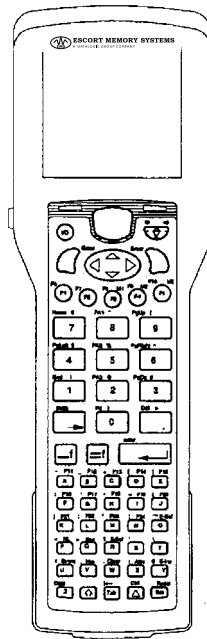
| | | |
|---------------------------|-----------------------|--------------------------------|
| Electrical | Supply Voltage | 7.2VDC |
| | Current | 100mA Continuous 400mA Peak |
| RF Interface | Data Transfer Rate | 1000 Bytes/Second |
| | Error Detection | CRC and Parity Check |
| | Antenna Type | Internal |
| Interface | Serial Host Interface | TTL |
| | Baud Rate | 9600 |
| | Connector | RJ45 - 10 Pin for PC2420 |
| Mechanical Specifications | Cable Length | 6ft. (2m) |
| | Antenna Body (L x W) | 8.25 x 1.22in. (210 x 31mm) |
| Environment | Operating Temperature | 32° to 140°F (0° to 60°C) |
| | Storage Temperature | -4° to 158°F (-20° to 70°C) |
| | Humidity | 95% Non-Condensing |
| | Protection Class | NEMA 4 (IP66) |

HMS816 Portable Reader/Writer

| | | |
|---------------------------|-----------------------|--------------------------------|
| Electrical | Supply Voltage | 12VDC |
| | Current | 100mA Continuous 400mA Peak |
| Interface | Serial Host Interface | RS232 |
| | Baud Rates | 9600, 19200 |
| | Connector | DE9S with DC Power Jack |
| Mechanical Specifications | Cable Length | 6ft. (2m) |
| | Antenna Body (L x W) | 8.25 x 1.22in. (210 x 31mm) |
| Environment | Operating Temperature | 32° to 140°F (0° to 60°C) |
| | Storage Temperature | -4° to 158°F (-20° to 70°C) |
| | Humidity | 95% Non-Condensing |
| | Protection Class | NEMA 4 (IP66) |

HMS814 / HMS816 Portable Reader/Writers and PC2420-Series Hand-Held Terminals

Mechanical Dimensions



Read/Write Ranges

HMS814 / HMS816 Portable Reader/Writers

Reading & Writing Ranges with HMS100-Series Passive Read/Write Tags

| | HMS108 | HMS112 | HMS125(HT) | HMS150(HT) |
|--------------------------------|--------|--------|------------|------------|
| Typical Range (Y) (inches/mm)* | 0.28/7 | 0.35/9 | 0.63/16 | 0.59/15 |
| Guaranteed Operating Range (X) | 0.24/6 | 0.28/7 | 0.51/13 | 0.47/12 |

* Proximity to metal, CRT devices and other sources of electromagnetic radiation may affect the range of the Antenna.

Available Models

| Model | Description |
|-------------|--|
| HMS814 | Portable RF Reader/Writer |
| HMS816 | Portable RF Reader/Writer with RS232 Interface |
| HMS814 J003 | Kit Includes: HMS814 Reader/Writer, PC2420 Hand-Held Terminal 00-1099 Battery and 00-1102 Battery Charger |

(Note: HMS814 will require a Hand-Held Terminal, a Battery and Battery Charger. See Accessories below.)

Accessories – PC2420

| Model | Description |
|-----------|---|
| PC2420 | Hand-Held PC Terminal |
| PC2425 | Hand-Held PC Terminal with RF Link |
| 00-1099 | Battery, PC2420 7.2V, 1350mAh |
| *00-1100 | Comm. Dock/Charger, PC2420 (Note: Requires CBL-1443 or CBL-1444 Cables and 00-1101 Power Supply) |
| *00-1101 | Power Supply for 00-1100 |
| 00-1102 | Battery Charger for Two Batteries 00-1099 |
| *00-1111 | Software Microsoft Visual C++ V1.52 |
| 00-1112 | Hand Strap for PC2420 and PC2425 |
| *00-1113 | Software Development Kit PC2420 (Note: Requires Visual C/C++ V1.0 or V1.5X or V4.X) |
| *CBL-1443 | RS232 Cable, DE9S to DE9S, Null Modem, 5-Wire |
| *CBL-1444 | RS232 Cable, DE9S to DB25P, Null Modem, 3-Wire |
| 17-1265 | Manual, PC2420/25 |

* Recommended Accessories for Development of Custom PC2420 Applications.

Your Complete Supply Chain RFID Provider – Call: 831/438-7000 Fax: 831/438-5768 Web: www.ems-rfid.com



Passive Read/Write Radio Frequency Identification (RFID) Typical & Guaranteed Read/Write Ranges

(inches/mm)*

| Readers/Writers | Tags | | | |
|----------------------|-------------------------------|--------------------|--------------------|----------------------|
| | HMS108 | HMS112 | HMS125(HT) | HMS150(HT) |
| HMS800 | Typ. ** Guar. ** | ** ** | 1.10/28 0.87/22 | 2.75/70 2.20/56 |
| HMS805 | Typ. 0.43/11 Guar. 0.35/9 | 0.67/17 0.55/14 | 1.14/29 0.91/23 | 1.38/35 1.10/28 |
| HMS810 | Typ. ** Guar. ** | ** ** | 1.10/28 0.87/22 | 2.75/70 2.20/56 |
| HMS815 | Typ. 0.43/11 Guar. 0.35/9 | 0.67/17 0.55/14 | 1.14/29 0.91/23 | 1.38/35 1.10/28 |
| HMS814 | Typ. 0.28/7 Guar. 0.24/6 | 0.35/9 0.28/7 | 0.63/16 0.51/13 | 0.59/15 0.47/12 |
| HMS816 | Typ. 0.28/7 Guar. 0.24/6 | 0.35/9 0.28/7 | 0.63/16 0.51/13 | 0.59/15 0.47/12 |
| HMS820 | Typ. ** Guar. ** | ** ** | 1.10/28 0.87/22 | 1.97/50 1.57/40 |
| HMS820-05 | Typ. 0.39/10 Guar. 0.31/8 | 0.59/15 0.47/12 | 0.91/23 0.70/18 | 1.38/35 1.10/28 |
| HMS820-04 | Typ. ** Guar. ** | ** ** | 0.71/18 0.55/14 | 1.57/40 1.26/32 |
| HMS830-04 | Typ. ** Guar. ** | ** ** | 0.71/18 0.55/14 | 1.57/40 1.26/32 |
| HMS820-08 | Typ. ** Guar. ** | ** ** | 1.18/30 0.94/24 | 5.00/127 4.02/102 |
| HMS830-08 | Typ. ** Guar. ** | ** ** | 1.18/30 0.94/24 | 5.00/127 4.02/102 |
| HMS830 | Typ. ** Guar. ** | ** ** | 1.10/28 0.87/22 | 1.97/50 1.57/40 |
| HMS830-05 | Typ. 0.39/10 Guar. 0.31/8 | 0.59/15 0.47/12 | 0.91/23 0.70/18 | 1.38/35 1.10/28 |
| HMS827-Vert. | Typ. 0.43/11 Guar. 0.35/9 | 0.67/17 0.55/14 | 1.18/30 0.94/24 | 1.89/48 1.50/38 |
| HMS827-Horiz. | Typ. 0.39/10 Guar. 0.31/8 | 0.55/14 0.43/11 | 0.98/25 0.79/20 | 1.57/40 1.26/32 |
| HMS827-03 | Typ. 0.35/9 Guar. 0.28/7 | 0.47/12 0.39/10 | 0.79/20 0.63/16 | ** ** |
| HMS827-04 | Typ. ** Guar. ** | ** ** | 0.71/18 0.55/14 | 1.57/40 1.26/32 |
| HMS827-06 | Typ. 0.47/12 Guar. 0.39/10 | 0.59/15 0.47/12 | 1.06/27 0.87/22 | 0.83/22 0.70/18 |

* Proximity to metal, CRT devices and other sources of electromagnetic radiation may affect the range of the Antenna.

** Not recommended