

Data Delivery

Medical data made portable, more reliable via rugged PDA interface

Frustrated by inaccurate patient data and manual gathering of information at hospitals, three years ago two surgeons founded MercuryMD Inc, Durham, NC, to address the problem. To streamline the flow of medical data,



MercuryMD developed the MData Enterprise System, which delivers patient data — medications, diagnostic reports, lab results, and other clinical information, typically transcribed from hand-written notes — to clinicians' handheld devices. Part of the system, their SyncStation kiosk, allows hos-

pital clinicians to download patient data from a hospital's information system onto their handheld device or PDA.

An earlier enclosure consisted of a vacuum thermoformed ABS cover placed over the electronics' metal housing. The redesigned unit, containing four transceiver boards and one eight-port network switch, is expandable to eight PDA pockets by adding an expansion module. It is compatible with handheld devices of manufacturers/brands of PDAs including Compaq, Handspring, Hewlett Packard, Kyocera, Samsung, Sony, Toshiba, Palm. Stan Coe of Coe Design Industries, Raleigh, NC, MercuryMD's contracted design firm, says, "The new SyncStation kiosk offers a more reliable infrared interface, easier PDA positioning and improved ergonomics over an earlier unit. The main challenge was to optically isolate concurrently active infrared data streams."

The 25-in high, 18-in wide, 9-in deep kiosk weighs 18 lbs. It carries a UL Std. 94 V-0 fire rating and is said to resist harsh cleansers with no staining or fading, and withstand high impact associated high traffic hospital environments and frequent insertion/removal of handheld devices. "Infrared immersion pockets," molded four-up and solvent-welded to the interior surface of the front panel, accommodate four PDAs and are angled for easy retrieval and viewing of the devices. An infrared transceiver affixed behind each pocket transmits signals through an internal network switch to/from PDAs and MercuryMD's MData Enterprise System. The kiosk's interior surfaces are sprayed with a

copper-containing coating that shields electronic components from electromagnetic interference. The pockets are lined with die-cut pressure sensitive black rubber sheet to contain infrared signals and cushion the PDAs.

The front and rear components of the enclosure are pressure formed of Kydex-T thermoplastic sheet made by Kleerdex Company, Bloomsburg, PA, in 0.187- and 0.250-in thicknesses respectively. The proprietary thermoplastic alloy is produced in more than 50 grades, 10 surface textures and 2000 colors for thermoforming, membrane pressing, laminating and fabricating applications. The heavier gauge sheet was specified to net wall thicknesses in deep drawn corners that exceed 0.028 in., the minimum gauge rated to UL 94 V-0. Fire-rated ABS, also considered, was rated to UL 94 V-0 — but in minimum thickness of 0.062 in. In addition to carrying a broader fire retardancy rating, Kydex sheet maintains a more uniform wall thickness than FR ABS, according to Coe. He states that the sheet used in this application exhibits impact resistance of 15 ft-lbs/in., tensile strength of 6100 psi, a Rockwell hardness of 94 R, and resists repeated cleaning with harsh chemicals with no stain or fading.

The sheet is specified in "snowflake" color with "velour matte" surface texture. Thermoformer PMW Products, Inc., Raleigh, NC, enhances the texture by sandblasting the mold, achieving a suede-like finish that aids in camouflaging scratches or gouges resulting from severe impact. PMW Products pressure-forms the front, rear and pocket components on a four-station rotary twin-sheet thermoforming machine using cast aluminum molds with integral stainless steel tubes for water cooling, ensuring constant mold temperature and part uniformity. Molded components are trimmed robotically.



—SG

Circle 157—MercuryMD Inc, or connect directly to their website via the Online Reader Service Program at www.rsleads.com/307df-157

Circle 158—Coe Design Industries, or connect directly to their website at www.rsleads.com/307df-158

Circle 159—Kleerdex Co, or connect directly to their website at www.rsleads.com/307df-159

Circle 160—PMW Products Inc, or connect directly to their website at www.rsleads.com/307df-160