MCL

MCL TECHNOLOGIES

MCL (Macro Command Language) for Datamax printers

Datamax printers become 'Intelligent' with the embedded MCL (Macro Command Language) client runtime module from MCL Technologies.

An intelligent printer puts the power of connectivity and communication in the printer. The Datamax printer now drives the application instead of the printer relying on instructions from a host device, such as a computer.

This technically advanced solution provides the ability to easily design custom applications that run only from a Datamax printer. The Datamax printer holds the power of intelligence, meaning the printer is in control, which is ideal for:

- *Standalone applications.*

- *Receiving or sending real-time data.*

- *Connecting to ERP systems (such as SAP and BaaN) or databases (such as Oracle, FoxPro, Act, Access, Excel, anything that is Microsoft ODBC compliant).*

- *Connecting and controlling secondary devices, such as another printer, weight scale, scanner, PDA, keyboard/pad or modem.*

- *Store database information required for large batch printing jobs.*

When you need a more compact data collection solution to keep your business in business, move up to Datamax with MCL.

MCL PRINTERS

are ideal for applications such as:

- Compliance Labeling
- Shipping & Receiving
- Product Identification
- Pharmacy Labeling
- Asset Tracking
- Inventory Control
- High Resolution Labeling

DATAMAX®

MCL

Consider the typical data collection application environment: a host computer with a resident database or ERP system, a communications network, a personal computer (PC), a thermal bar code label printer, a bar code scanner, and an operator.

Now consider its challenges and shortcomings: ongoing maintenance, training, upkeep, and security. Now consider the same application environment without the PC!

With an MCL-enabled Datamax printer such an application scenario is not only possible, it may just be the best solution to your data collection challenges. An MCL-enabled Datamax "intelligent" printer can be programmed to accommodate a variety of peripheral input devices, accept the incoming data, validate it, and write it to a printer-resident text file or pass it on to a remote ERP application or database. And without a PC in the middle of it, just imagine what you will be missing: PC viruses, PC hardware failures, PC operating system maintenance, and the temptation for an operator to play PC-resident games or surf the Internet. How is this possible?

STEP #1: DESIGNER

The MCL-Designer for Datamax is a Rapid Application Development (RAD) tool used to create inventive, robust data collection applications, which will be stored in and run from the Datamax printer.

The Designer runs on a Windows™ PC and provides a graphical user interface for an individual to assemble the user screens, input prompts, label definition, error messages, pre and post actions, data sources, data destinations, and communication methods which combined will become the MCL application script.

The Designer also includes a method for automatically generating complete documentation for the MCL application. From a few simple mouse clicks comprehensive documentation is produced concerning all aspects of the MCL application, its prompts, messages, inputs, outputs, data directories, and host relationships.

For a value added dealer, systems integrator, or systems analyst, this feature will save valuable time when trying to educate others about the application.

STEP #2: SIMULATOR

A secondary function of the MCL- Designer is the built-in Simulator, which visually represents the LCD and control panel of a Datamax MCL-enabled printer. Using the Simulator the operator can step through the MCL application to test its functionality before actually loading the MCL application into the printer. This is the ideal time to "fine tune" the application's user interface:

- *Are the prompts worded correctly?*
- *Does the application "branch" at the necessary decisions?*
- *Does the bar code scanner read the expected symbologies?*
- *Does the label print when it is supposed to?*
- *Do the appropriate tables get updated?*
- *Does the correct database provide the expected look-up data?*

The Simulator can also be run in "debug" mode to help the operator track down unexpected surprises in how the MCL application is behaving.

STEP #3: DMX-LOADER

Once the operator is satisfied with how the MCL application is functioning in the Simulator, he or she is ready to load the application into the Datamax printer. The DMX- Loader provides the operator with a convenient method for identifying all of the individual files that the MCL application will need, and transferring them to the available flash memory of the Datamax printer.

STEP #4: CLIENT

The MCL component that actually resides between the printer's inbound communication ports and the DPL parser, the MCL script interpreter, is known as the MCL-Client, or runtime module. When an MCL-enabled Datamax printer is powered up, the firmware checks to see if there is a MCL application resident. If there is, the application will run. If no application is present, MCL-Client will relinquish control of the printer to the Datamax printer firmware.

HOST INTERFACES

MCL has created MCL-Designer Add-On's for a few of the most widely used ERP systems: SAP and BaaN. Additionally, application "bridges" are available for the following:

- *Any SQL Compliant Database*
  (Oracle, SQL-Server, Sybase, Access, Informix, Foxpro …)
- *Any Application/Program supporting DLL Library*
  (VB , C, VC++ , Delphi, Java, PowerBuilder, …)
- *SAP R/3 Using Certified IDOC, BAPI, RFC, interface to all SAP modules*
  (IM, SD, WM, PP, PM ,PS ...)
- *Baan Open World using BOI (Business Object Interface) and VB scripting*

APPLICATION EXAMPLES

Scan-and-print. A bar code scanner attached to an I-4210 reads the PO bar code on incoming cartons. Using the PO number the printer queries the host database to print out part number bar code labels of all items on the PO.

Product Labeling. An I-4210 is loaded with all of the product identification label formats. As a product reaches the end of the assembly line the operator scans the part number bar code from the manufacturing document, the printer matches the part number with the appropriate label format and prints out the product label.

COMPONENT OVERVIEW

A. MCL-Designer for Datamax Printers – provides an easy interface for quickly developing applications that connect your Datamax printer and your ERP system. Operating in a Windows® graphical user interface (GUI) environment, MCL-Designer is an Auto-ID application program designer, employing unsurpassed, intuitive programming characteristics.

MCL-Designer makes it possible to easily develop complex batch, wireless LAN, and wireless WAN applications with limited programming knowledge.

B. MCL-Link for Datamax – is a communication program for sequential, point to point, exchange of files and/or data records between host systems and a Datamax printer.

C. MCL-Net for Datamax – is a communication program for simultaneous, multi point, wired or wireless exchange of files and/or data records between host systems and a Datamax printer.

D. MCL-Collection for Datamax Printers – contains: MCL-Designer for Datamax, MCL-Link, MCL-Net- this software collection is ideal for resellers and system integrators as a rapid application development (RAD) tool with a quick learning curve and intuitive GUI interface.

E. MCL-R/3 Bridge – is an SAP certified communication interface that extends your bar code functionality to printing and data execution. The MCL-R/3 Bridge interfaces with all R/3 modules (IM, SD, WM, PP, PM, PS, HR) where RFC's, IDOC's or BAPI's are defined as standard interfaces.

F. MCL-R/3 Bridge Designer add-on – a robust software tool that seamlessly combines with MCL-Designer for Datamax to create custom SAP applications for your particular environment.

G. MCL-Bridge for BaaN – BaaN OpenWorld interface that extends your barcode functionality to printing and data execution. The MCL-Bridge for BaaN interfaces with the OpenWorld/BOI module from BaaN.

H. MCL-Bridge for BaaN Designer add-on – a robust software tool that seamlessly combines with MCL -Designer for Datamax to create custom BaaN applications for your particular environment.

COMPATIBILITY

MCL-Collection for Datamax has an additional benefit as it enjoys a large installed base of MCL-enabled data collection terminals by the industry's leading data collection providers. MCL's on going partnership with these manufacturers has resulted in some exciting applications.

This means that where MCL components are installed the Datamax printer will easily install into the existing architecture.

Manage today's solutions for your standalone or enterprise connected workforce by combining Datamax quality printing and MCL's power to easily program applications. This solution puts control in your hands and the printer has no boundaries.

Datamax delivers unequalled reliability and connectivity with the fastest and most reliable way to deploy, update, track, and manage your business assets anywhere in the world. Whether you need to deploy inventory tracking, manage product flow, or provide real time labels, the unique Datamax-MCL architecture delivers the solution for you.

> **PRODUCT SPECIFICATIONS**

MCL

Supported A-Class Printers	A-4212, A-4310, A-4408, A-4606, A-6212, A-6310
Supported M-Class Printers	M-4208, M-4306
Supported I-Class Printers	I-4210, I-4212, I-4308, I-4406, I-4604
Supported W-Class Printers	W-6208, W-6308, W-8306
Connectivity Support	DMXNet (Ethernet) and Serial
Minimum PC Requirements for MCL Designer, Simulator, DMXLoader	Pentium III, Windows2000™, SVGA display, 64MB RAM, 1GB available hard disk space
Peripheral Support	■ General Purpose I/O (GPIO) for input and output ■ Standard IBM®-style keyboard with PS/2 keyboard connector. Requires the Datamax PS/2-to-serial converter.
Bar Code Scanners	Serial connection. Decoded ASCII text output. Must be capable of adding a carriage return to the end of the collected datastream being sent to the printer.
Supported Host Operating Systems	Windows, (others upon request)
MCL Designer Specifications	■ Up to 99 separate programs can coexist ■ Maximum of 99 screens per project application ■ Maximum of 260 global variables per project, variables may be reused within a given project ■ Maximum of 64 fields per record in a printer resident lookup table (fixed length records, fixed length fields) ■ Maximum of 20 SQL select conditions in a given SQL process query ■ Maximum of 676 printer resident look-up or capture files

The MCL-Designer for Datamax is a Rapid Application Development (RAD) tool used to create inventive, robust data collection applications, which will be stored in and interpreted by the MCL-Client in the Datamax printer. MCL has also created MCL-Designer Add-On's for a few of the most widely used ERP systems: SAP® and BaaN®.

MCL-Link for Datamax is a point to point communication program for batched transactions and exchange of files and/or data records between the host system and a Datamax printer.

Application "bridges" are available for SQL compliant databases, DLL library support, SAP R/3, and Baan Open World.

DMX-Loader is a powerful file transfer and file management utility that utilizes a simple graphical interface for copying various types of firmware and MCL project files to the Datamax printer.

MCL-Net for Datamax is a multi-point communication program for wired or wireless exchange of files and/or data records between the host system and Datamax printers.

DATAMAX®

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