

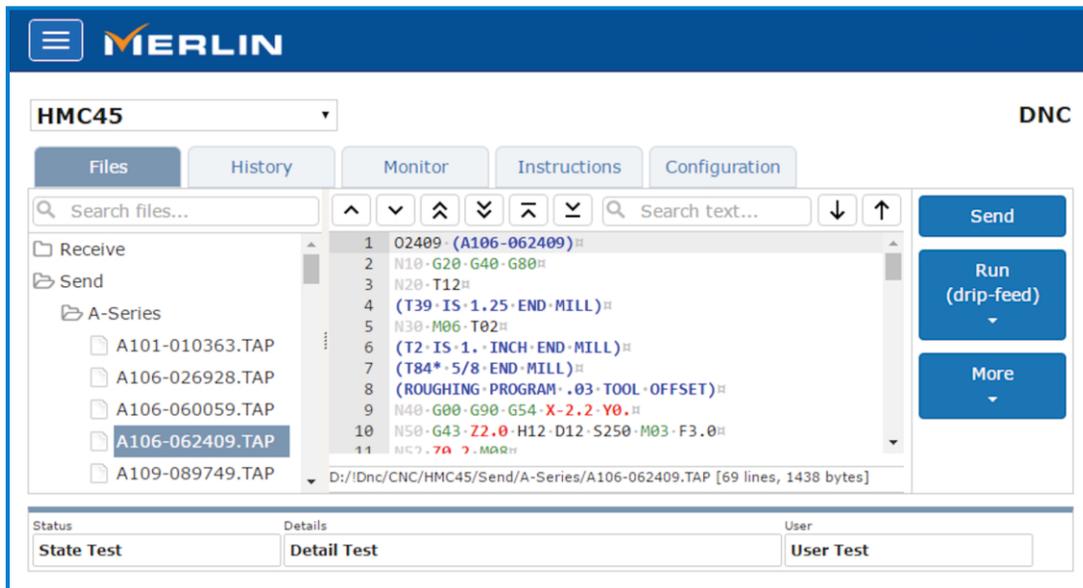
# MERLIN DNC

## Achieve maximum machine utilization

MERLIN DNC is a new plug-in for MERLIN, the IIoT (Industrial Internet of Things) communication platform, that connects your CNC machine tools for efficient transfer of CNC programs and other data. With MERLIN DNC you can load, run (drip-feed) and save CNC programs with up to 1,000 machines simultaneously. MERLIN DNC works with machines equipped with Ethernet, RS-232C and tape reader communication interfaces.

### BENEFITS

- Accurate and reliable part program transfer
- Reduce setup time to keep machine running at maximum utilization
- Minimize machine errors
- Drip-feed large files with convenient mid-program restart
- MERLIN DNC is compatible with the MERLIN communication platform
- Browser-based user interfaces that work with the latest computers, tablets and smartphones
- Payback to bottom line measured in months
- Standard configurations for most CNC models



MERLIN DNC Operator Panel



MERLIN is an IIoT Shop-Floor-To-Top-Floor communications platform that provides manufacturing analytics in Real-Time.

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## FEATURES

**Modern design ensures longevity:** MERLIN DNC uses the latest technologies to prevent early obsolescence. Its browser-based user interfaces work with the latest computers, tablets and smartphones.

**Reliable networked DNC:** With MERLIN DNC, every machine is a node on the corporate network. Standard high-speed error-correcting Ethernet connections (wired or wireless) connect every machine. Lengthy RS-232C serial cables are completely eliminated.

**Choice of user interface:** Access MERLIN DNC's Web-based Operator Panel with a computer, tablet or smartphone browser. Or remotely access MERLIN DNC using the machine's control panel.

**Easy to install and use:** MERLIN DNC takes the guesswork out of DNC. Standard configurations are provided for most CNC models. Each configuration includes a notes section with the CNC parameter settings, alarm codes and operating procedures you need to get started fast.

**Reduce setup time:** There is no need to walk back and forth to a computer to load files for the next job. CNC operators can quickly access MERLIN DNC at the machine using Ethernet FTP, RS-232C remote commands, or a Web browser.

**Effortless standards compliance:** MERLIN DNC helps ensure only current program versions are used, and records details of every file transfer. When operators save modified programs, MERLIN DNC preserves the original version to help you document changes.

**Monitor DNC transfers:** Monitor DNC transfers in real time. View detailed records of past transfers, including user and file name, date and size. MERLIN DNC even records the first few lines of the file so you can verify version or other details you include in comments at the start of the program.

**Convenient file comparison:** MERLIN DNC lets you quickly compare files to identify differences. With remote RS-232C transfers, you can automatically compare files to verify accurate transfers.

**Quality assured:** MERLIN DNC software is subjected to stringent automated and manual testing to assure the highest quality.

**Single source solution:** MERLIN DNC works with the newest Ethernet-connected machines, older RS-232C machines, and even many of the oldest punched-tape machines. And MERLIN DNC works with MERLIN Tempus to provide a single source for OEE and DNC.

## RS-232 DNC

MERLIN DNC works with most machines equipped with an RS-232C serial port using a variety of protocols.

**Versatile remote commands:** CNC operators can remotely load, run (drip-feed), save and compare part programs and other data. Remote commands are easy to use. To load a file from MERLIN DNC, for example, the CNC operator sends a simple one-line program:

```
O7990  
(SEND R44-465)
```

**Drip-feeding with mid-program restart:** Easily restart drip-feeding from a specific line in the file. When restarting, MERLIN DNC can automatically insert lines of G-code you specify to configure the machine for restarting.

**Keep operators informed:** If MERLIN DNC can't find a requested file, or any other error occurs with remote commands, an informative message is sent to the CNC operator. When a file is saved, MERLIN DNC sends a confirmation message including the first and last several lines from the received file.

**Automatic and manual comparison:** When you load or save a program, MERLIN DNC can automatically compare the computer file with the machine program to verify accurate transfers. Or, you can manually compare a file to identify changes.

**Automatic file naming prevents errors:** Programs received from the CNC are automatically named according to the program name or a part number you include as a comment. You can save each program in a separate file, or combine a main program with one or more sub-programs.

**Electrical isolation protects against expensive repairs:** RS-232C connections can leave your expensive equipment susceptible to damage from electrical surges. MERLIN DNC works with approved Ethernet/RS-232C adapters to provide valuable electrical isolation.

**Wired or wireless shop floor:** MERLIN DNC works with approved wired or 802.11a/b/g wireless Ethernet/RS-232C adapters. Wireless adapters support encryption, data rates up to 54Mbps and a wireless range of up to 100 meters.



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### Accurate & Reliable

Part program transfer



### Payback

Bottom line measured in months

## ETHERNET DNC

**MERLIN DNC works with Ethernet-connected CNC machines:** FTP client, FTP server, shared folder and SMB/Samba protocols are supported.

**Added value for Ethernet DNC:** Unlike generic FTP and file copying, MERLIN DNC controls access to files and folders and keeps a detailed log of all transfers.

## TAPE READER DNC

Choose the MEMEX 440A Behind-the-Tape Reader (BTR) to connect older machines to MERLIN DNC. The 440A BTR is compatible with most machines equipped with a punched tape reader. An Ethernet/RS-232C adapter is required to connect the 440A BTR to the network.

## UNIVERSAL DNC INTERFACE

The MEMEX MERLIN DNC adapter incorporates an RS-232C serial port and a three-port Ethernet switch. For example, you can connect a CNC machine, an MTC-One OEE adapter, and perhaps a computer terminal, with a single Ethernet drop.

Uses 12-24 VDC power from the machine control.

The screenshot shows a configuration window for 'QT-770'. On the left is a sidebar with menu items: Main, Notes, File naming, Ethernet options, RS-232C options, Receive options, Send options, Remote commands, Remote options, Text substitutions, Drip feed, and Miscellaneous. The main area is titled 'Remote Commands' and contains a 'Begin with' and 'End with' input field. Below is a table of commands:

Command	Identifier	Description
Load	L	Load file into CNC from DNC
Run	R	Drip-feed program from DNC
Save	S	Save file from CNC to DNC
End save	E	Terminate "Save" command
Compare	C	Compare files
Messages	M	Load message list to CNC from DNC
Directory	D	Load file list to CNC from DNC
Print	P	Print file

Below the table is a 'Command Example' section with an 'Example filename' input field containing '01234'. The examples shown are:

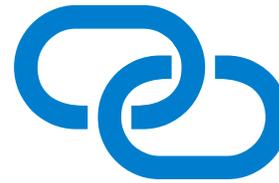
```
(R 01234)
Drip-feed file 01234
(R 01234 N3870)
Drip-feed starting at line containing N3870
```

Configuration Editor



### Reduced Setup Time

Keep machines running at maximum utilization



### Link

Existing backplotters, file managers, editors, etc.



## Universal DNC Interface

### ABOUT MEMEX™

The Industrial Internet of Things (IIoT) powered by machine to machine (M2M) connectivity coupled with software capable of collecting, analyzing, and intelligently presenting streams of manufacturing data represents no less than the next Industrial Revolution. MEMEX with its visionary attitude has been on the leading-edge of the convergence of the industry trends in Computing Power, Connectivity of Machines, Industry Standards, Advanced Software Technology, and Manufacturing Domain Expertise. Leading this transformation is MEMEX Inc., the developer of MERLIN, an award winning IIoT technology platform that delivers tangible increases in manufacturing productivity in Real-Time.

MEMEX, with its comprehensive understanding of the manufacturing industry, is the global leader in machine to machine connectivity solutions.

Committed to its mission of “Successfully transforming factories of today into factories of the future” and encouraged by the rapid adoption and success of MERLIN, MEMEX is relentlessly pursuing the development of increasingly innovative solutions suitable in the IIoT era. MEMEX envisions converting every machine into a node on the corporate network, thereby, creating visibility from shop-floor- to-top-floor.

MEMEX, with its deep commitment towards machine connectivity, offers solutions that are focused on finding hidden capacity by measuring and managing Real-Time data. This empowers MEMEX’s customers to effectively quantify and manage OEE, reduce costs and incorporate strategies for continuous lean improvement.



#### PRODUCTIVITY

10%-50% average productivity increase



#### PROFITS

20% + profit improvement based on just a 10% increase in OEE



#### PAYBACK

payback in less than four months with an Internal Rate of Return (IRR) greater than 300%



#### CONNECTIVITY

connects to any machine, old or new

Contact MEMEX to implement IIoT data-driven manufacturing now.



Toll Free: +1 (866) 573-3895  
Head Office: +1 (905) 635-1540  
info@MemexOEE.com  
www.MemexOEE.com