

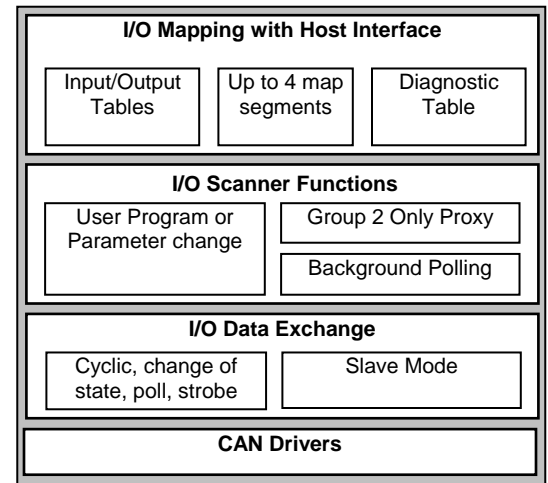
DeviceNet Master Developers Kit

What is it?

- The DMDK is a DeviceNet Master & I/O Scanner Library that allows developers of PC based & embedded DeviceNet products to add I/O scanner functionality to their product.
- The Library contains source code, Application Program Interface (API) definitions, a user manual and technical documentation that explains the overall scanner architecture.
- Recent enhancements include the following key features and benefits.

Enhancement Overview

- Quick Connect
- Scanner CCV
- Identity CCV
- Identity Heartbeat
- Philips XAC3 support



DMDK Strengths

- The code base has an approximate 32K footprint.
- 32K ANSI "C" code for easy porting to different microprocessors.
- Some routines are also provided in x86 assembler for applications using that processor platform.
- Supports **simultaneous** operation as both a master and a slave, while supporting explicit message connections. (default of 5, more can be added via compile-time settings)
- Includes scanning functions for: Change-of-State (COS) both acknowledged and unacknowledged; cyclic (including device "heartbeat"), poll, and strobe behavior; background polling for lower priority nodes; I/O mapping for up to 4 segments, *this includes Bit level mapping* (e.g. map from byte x, bit y for z bits); and explicit messaging from host to devices on the network.
- Slave functions support: data sharing between masters and Change-of-State, cyclic, poll and strobe behavior.
- Configuration support from the network (on-line) and host-side. Local explicit messaging from host to the scanner itself: scan list configuration and access to local attributes/services.
- Autobaud ready—operates at all Baud rates (note: platform must supply additional autobaud circuitry).
- Supports network download of new executable firmware (FLASH): boot and executive partitions supported, Non-Volatile Storage Object model provided.
- O/S independent. Ships with a local task dispatcher and can be ported to an O/S if desired.
- Supports multiple CAN controllers: API defined for CAN interfaces, examples for Intel 82527, Philips SJA1000 and XAC3 are included.

- User-selectable I/O size.
- Several diagnostic features including:
 - Fault Node Table**.....Indicates which nodes are no longer operating on the network
 - Idle Node Table**.....Indicates which nodes are in idle mode (not affecting outputs or reporting inputs)
 - Device Status Table**...Indicates that the configured I/O size for a device disagrees with the actual I/O sizes that the device is attempting to operate with (Auto Verify Failure Table)
- Complete error recovery and electronic keying to guarantee correct node replacement. Uses vendor ID, device type, and product type to determine if proper device is connected.
- All necessary documentation included: CAN API specifications, host interface specifications, architecture specifications, and a users guide.
- Compile time options for speed vs portability.
- Supports “module status” and “network status” I/O LEDs for device status information.
- Supports origination and target for explicit connections.
- Supports all functions required for a master including UCMM proxy for Group 2 Only slaves.
- Supports Device Heartbeat, Scanlist Configuration Consistency Value (CCV) and Identity CCV.
- Supports the rapid connection establishment method known as Quick Connect.
- Premium edition (additional fees) includes Auto Device Replacement functionality.

DMDK Benefits

- Can be built to run on a PC, card and driver required, to aid development time: DOS application included in the toolkit decouples firmware development from hardware development.
- Original Library developed by Rockwell Automation/Allen-Bradley, the inventor of DeviceNet.
- The code is based on designs proven successful in installations worldwide.
- Code has been verified with Open DeviceNet Vendor Association (ODVA) Conformance Test Software version 1.3-1.0.
- Tested with all Rockwell products and several third party products to ensure quality assurance.
- Proven portability on independent platforms.
- Compiler independence through the use of ANSI “C.”
- Exhaustive system testing on large, fully loaded networks with maximum nodes, drop cable, trunk to further ensure consistent performance.
- Detects power loss on the network to avoid confusion between nodes missing versus network power loss (note: platform must supply power loss circuitry).
- Supports the storage of configuration data in non-volatile memory and the ability to update product firmware via the network.
- Scanlist configuration is supported by RSNetworx for DeviceNet, so no need to develop a special tool to configure your product. If you wish to have a static configuration or create your own tool, scanlist configuration can be done from the application side or the network.