

User's Guide

Version 1.0

DL3000 Communication Controllers

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1.0 INTRODUCTION

1.1 GENERAL

DataLink products provide communications interconnectivity solutions for industrial applications. The DataLink family of products enables industrial Local Area Networks (LANs) such as Allen-Bradley (A-B) Data Highway Plus (DH+), A-B Remote I/O Link (RIO), and Modicon Modbus to be connected to a wide variety of other manufacturers' products and networks. DataLink devices incorporate a flexible hardware platform that can be used in a wide range of device and network interconnectivity applications. Existing application software with a serial driver capable of Allen-Bradley serial DF1 protocol (CH 0 / KE / KF) can be used with the DataLink family of interface products. Both freestanding serial units and computer bus interface cards are available.

This User's Guide contains information on the general features and capabilities of DataLink DL3000 products which are suitable for shelf or DIN rail mounting. Additional technical literature, application notes and/or text files are on compact disks supplied with DataLink units and are also available from our web site.

Other reference materials required to fully service all the various parts of your communication interface system depend on the specific protocol, serial and network interfaces, and the OEM equipment used in your application. See 'Reference Materials' in section 1.2 of this User's Guide.

Custom engineering software and hardware services are available to either modify an existing device or to create a unique application solution.

1.2 REFERENCE MATERIALS

Reference materials required to fully service all the various parts of a communication interface system depend on the protocols, serial and network interfaces, and the specific OEM manufacturer's equipment used in the application.

This User's Guide contains information on the features and capabilities common to most standard DataLink DL3000 communication controllers. Information on the features and capabilities of specific DataLink products is supplied in the form of technical literature, application notes and/or text files on compact disk.

OEM manufacturers generally provide the necessary technical information supporting their products. Documentation is usually available to assist clients to understand and use the manufacturers' specific products and communication protocols correctly. Call the equipment manufacturer for assistance in selecting the appropriate technical literature required for a specific application.

Contact DataLink Technologies, Inc. for additional installation and start-up assistance.

Example: Communicating with Allen-Bradley Data Highway Plus

DataLink products that interface a computer to Data Highway Plus or Remote I/O networks use the A-B DF1 serial protocol to communicate with the application software. "DF1" actually refers to the D1 and F1 subset of ANSI / IEEE Standard X3.28 for communications protocol.

Most popular DH+ application programs include the A-B DF1 protocol driver. Depending on the program being used, it may also be called the "A-B Serial Driver" or the "RS232 Serial Device Driver." This driver is the same one used for serial communications to an A-B PLC-5 or SLC500 serial port Channel 0 (CH0) or to A-B's 1785-KE (KE) and 1770-KF2 (KF) communications interfaces.

The following Allen-Bradley publications contain technical data for the use of the DF1 protocol with A-B PLCs and provide information on Protocol, Commands, Messages, Diagnostics etc. The publications are usually available from A-B sales offices and distributors:

DF1 Protocol and Command Set Reference Manual	A-B Publication 1770-6.5.16
Communication Interface Module (1770-KF2):	A-B Publication 1770-6.5.13
Communication Interface Module (1785-KE):	A-B Publication 1785-6.5.2

1.3 DL3000 INTERFACES

DataLink DL3000s (DLs) support both DH+ and RIO network protocols and use A-B's DF1 (CH 0 / KE / KF) serial driver. In DH+ mode the DL provides PCs, MMIs, and computers with an interface to an A-B DH+ network. In RIO mode the DL can operate as an RIO scanner or adapter. In scanner mode, the DL allows communication with I/O racks and in adapter mode, provides PCs, MMIs, and computers with an interface to A-B compatible Remote I/O (RIO) scanners. Other firmware options and custom drivers are also available. To determine the capabilities of your DataLink, please record the model and serial number of the unit and contact DataLink for more details.

DLs have a built-in firmware program in flash memory, an EEPROM configuration memory, a RAM message buffer, and an on-board processor.

DLs interface to the application software using the same serial software driver (A-B serial / DF1 / CH 0 / KE / KF) as used to connect to A-B serial devices such as the 1770-KF2, the 1785-KE, and the front serial port on A-B PLC-5s and SLC500s.

CH A LED	Indicates network communications / status
CH B LED	Indicates serial communications / status
CH C LED	Indicates serial communications / status
Configure Pushbutton	Initiates BIOS "Off-line Manager" program
Reset Pushbutton	Performs complete hardware reset of unit

2.0 TECHNICAL SPECIFICATIONS

2.1 INTERFACE SPECIFICATIONS

NETWORK INTERFACE: Channel A (CH A) is a three-pin Phoenix connector located on the face of the DataLink. This interface is sometimes referred to as the Network port or Synchronous port. It is the main high-speed industrial LAN interface used for networks such as DH+ and RIO.

Network Port:	Transformer coupled, differential signal interface
Basic modulation:	Bi-phase manchester encoded signals
Optional modulation:	Other bi-phase and ASK, FSK etc.

SERIAL INTERFACE: Channel B (CH B) is a DB9 male RS232C connector. This can be used to configure the DL3000 via a PC's or laptop's com port, or to connect a device running the DF1 device driver to the network. Optionally, the DL can be engineered to communicate with custom RS232 or RS422 networks and devices. Please contact DataLink for more information.

2.2 PUSHBUTTONS, CONNECTORS, AND INDICATORS

This section contains information on the physical position and main purpose of the components located on the DataLink DL3000. For a full description of the LEDs' functions, refer to section 3.3.

CH A LED	Indicates network communications / status
CH B LED	Indicates serial communications / status
CH C LED	Indicates serial communications / status
Configure Pushbutton	Initiates BIOS "Off-line Manager" program
Reset Pushbutton	Performs complete hardware reset of unit
CH A Connector	3-pin Phoenix connector for network interface
CH B Connector	DB9M connector for RS232C serial interface

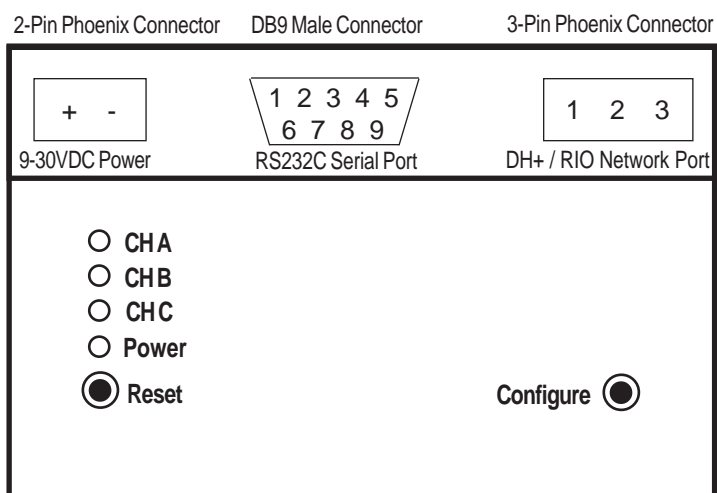
2.3 HARDWARE SPECIFICATIONS

POWER:		9-30 VDC; 2 Watts
INSTALLATION:		Rubber feet for desktop use Clips for DIN rail mounting included
ENVIRONMENT:	Operating:	+32° to +122°F (0° to +50°C)
	Storage:	-40° to +185°F (-40° to +85°C)
	Humidity:	5% to 95% Non-condensing
CONTROLLER:	CPU:	Zilog Z80182; 12.288 Mhz; 2 USARTs +1 UART Enhanced Z80 CPU core
OSCILLATOR:	Standard:	14.7456 Mhz for ESCC network interface
EEPROM:	Standard:	256 bytes
FLASH PROM:	Standard:	64 Kbytes
RAM:	Standard:	32 Kbytes
PUSHBUTTONS:	Configure:	Initiates BIOS "Off-line Manager"
	Reset:	Resets DL, putting it in On-line mode
INDICATORS:	CH A:	CH A network activity and DL mode
	CH B:	CH B serial activity and DL mode
	CH C:	CH C activity and DL mode
	Power:	Indicates power to the unit
INTERFACES:	Serial:	Synchronous SDLC network Asynchronous RS232 or RS422
PROTOCOLS:	CH A Network:	DH+ or RIO
	CH B Serial:	DF1, Modbus, ASCII, and custom
CONFIGURATION:	Software:	PC-based menu system parameters saved in EEPROM
ERROR CHECK:	Mode:	BCC or CRC 16
COMMUNICATIONS:	Network:	DH+ and RIO to 230.4 Kbps
	Serial:	Asynchronous to 230.4 Kbps
CONNECTORS:	Power:	2-pin Phoenix connector for 9-30VDC
	Network:	3-pin Phoenix connector for DH+ / RIO
	Serial:	DB9 male RS-232 connector

3.0 PUSHBUTTON, CONNECTORS, AND LEDS

3.1 DL3000 LAYOUT

The diagram below illustrates the pushbutton, connector, and indicator layout for DataLink DL3000s (DLs).






3.2 CONFIGURE PUSHBUTTON

Pressing the **Configure** pushbutton sets the DL into a special Off-line mode and initiates a BIOS-based "Off-line Manager" utility program, turning the DL's **CH A** and **CH C** LEDs **RED** (the **CH B** LED will turn **GREEN** for a brief moment, but will then turn off). This mode is mainly used to configure the DL3000's communication parameters through the configuration software. This mode also enables other Off-line operations such as internal diagnostics tests, debug operations, and burning new firmware into Flash memory.

3.3 LED INDICATORS

3.3.1 POWER-UP AND RESET




On power-up, reset, or after execution of a software reset command, the DL will go through a diagnostic test sequence and then enter its On-Line mode. The correct LED indicator sequence is:

LED	COLOR	STATUS
 CH C	Green	ON first, OFF after 1 second
 CH B	Green	ON second, OFF after 1 second
 CH A	Green	ON third, OFF after 1 second

The CH B LED will then flash RED once and if the DL is receiving and responding to commands directed to it (such as on an active DH+ or RIO network) CH A's LED will turn **GREEN**. If the DL is not connected to an active network or is connected but not receiving or sending tokens or commands, the CH A LED will flash green at a rate of once per second.





3.3.2 ON-LINE OPERATION

The following describes the DL's LED activity during On-line DH+ operation:

LED	DESCRIPTION	STATUS
	CH A Solid Green	Actively passing tokens on the network.
	Flashing Green	FLASHES at a rate of 1 Hz. DL is polling for stations on inactive network
	Flashing Red	FLASHES once per second for node address error
	CH B Green	ON when the DataLink is transmitting or receiving messages through its Channel B serial port.
	Flashing Red	FLASHES intermittently when communication error (NAK) is detected
	CH C Green	ON when the DL is transmitting or receiving messages through Channel C
	Flashing Red	FLASHES intermittently when communication error (NAK) is detected






3.3.3 CONFIGURATION, DIAGNOSTIC, DEBUG MODES

The following table shows the status of the indicators on the DL when it is in its Off-Line modes of operation.

LED	COLOR	STATUS
 CH A CH B CH C	Solid Green Solid Red Solid Green	Off-Line Configuration / Diagnostic mode
 CH A and CH C	Solid Red	Off-line Utilities mode
 All LEDs	Solid Green	Off-Line Debug mode
 CH A and CH B	Flashing Green	Data is being transferred serially to the DL

3.3.4 ERROR DETECTION

The following table describes the meaning of the LEDs on the DL if the internal diagnostics of the DL detect an error during power-up or during on-line operation.

LED BEHAVIOR	PROBLEM	SOLUTION
 CH A flashes RED at 1 Hz	DL is configured for an existing network address.	Change one of the duplicated addresses
 CH B flashes intermittently	NAK detected	Buffer full
 ALL LEDs flash RED on and off together	RAM or FLASH memory parity error detected	Contact manufacturer. May need factory repair
 ALL LEDs off	Firmware not installed or invalid	Reload FLASH file. May need factory repair
 Cycles through Power-up sequence	EEPROM is corrupt	Restore EEPROM to factory default settings

4.0 INTERFACES AND CONNECTIONS

A diagram showing the position of the DL's connectors can be found in section 3.1.

CH A on the DL3000 is the 3-pin Phoenix connector. It is used to connect the DL to synchronous industrial networks such as A-B's DH+ and RIO Link. This connector is also compatible with the 3-pin network connector used on A-B equipment such as PLC-5s.

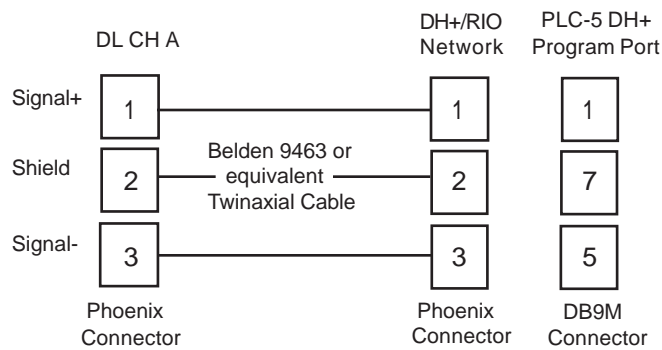
CH B is a DB9 male connector used for parameter configuration as well as RS-232 asynchronous serial communications. CH B can also be configured for RS-422.

4.1 CH A - NETWORK

CH A is pre-configured as a transformer-coupled differential interface used for synchronous serial communications to Allen-Bradley Data Highway Plus and Remote I/O Link networks.

Pin numbers for the DL's 3-pin Phoenix connector are 1, 2, 3, where pin 1 is closest to the DB9 connector (see section 3.1). Pin 2 is connected to DC ground via an internal 150K ohm resistor on the DL3000's board. Pin numbers for an A-B PLC-5 processor's 3-pin connector are 1, 2, 3, top to bottom.

PIN	DESCRIPTION
1	Signal +
2	Signal Ground (via on-board 150K ohm resistor)
3	Signal -



4.2 CH B - SERIAL

Channel B (CH B) is a DB9 male RS-232 connector located on the DL and can be configured for RS232 or RS422 using the DataLink configuration software. Pin placement for the DL's DB9 male connector can be found in section 3.1.

4.2.1 INTERFACE SIGNAL DEFINITIONS

Input refers to the direction of data going into the DL and Output refers to data coming out of the DL.

SIGNAL	INTERFACE	DESCRIPTION
GND	RS232	Ground
Rx	RS232	Serialised Data Input
Tx	RS232	Serialised Data Output
RTS	RS232	Request To Send
CTS	RS232	Clear To Send
DTR	RS232	Data Terminal Ready
RX +	RS422	Differential + Serialised Data Input
RX -	RS422	Differential - Serialised Data Input
TX +	RS422	Differential + Serialised Data Output
TX -	RS422	Differential - Serialised Data Output

4.2.2 RS232C SERIAL INTERFACE WIRING

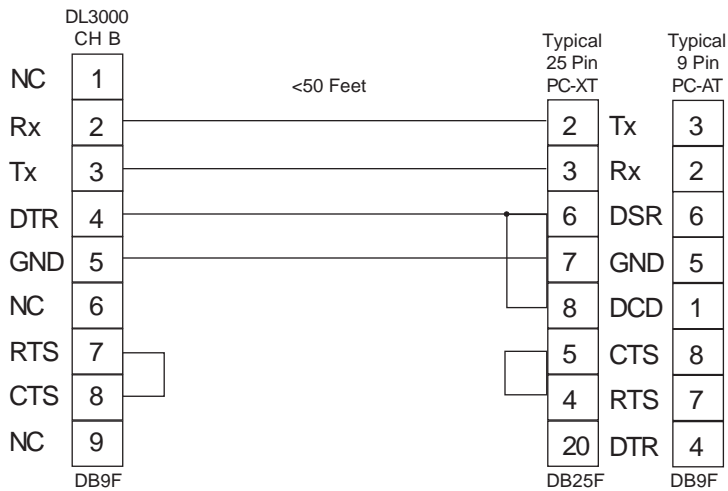


Fig. 1: DL3000 CH B RS232C to PC or other devices - no handshaking

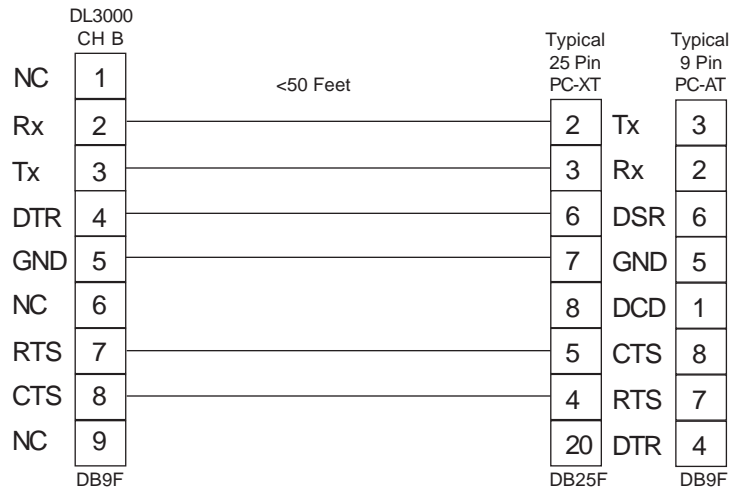


Fig 2: DL3000 CH B RS232C to PC or other devices - with handshaking

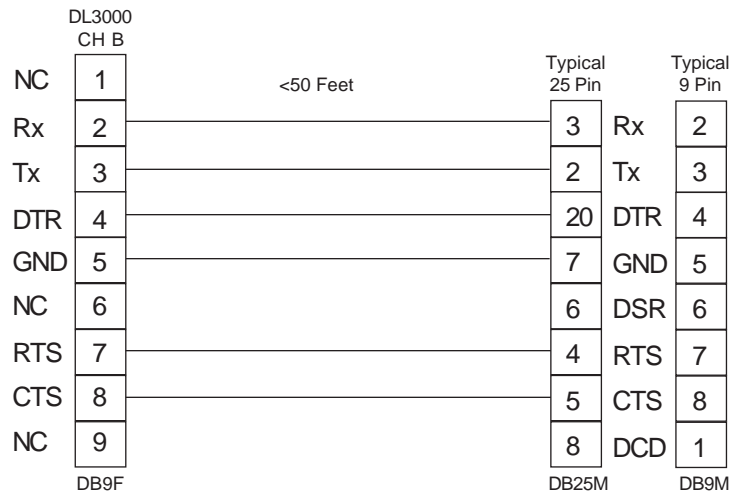


Fig. 3: DL3000 CH B RS232C to MODEM - with or without handshaking

5.0 CONFIGURATION AND DIAGNOSTICS SOFTWARE

5.1 OVERVIEW

The primary purpose of the DL2 and DL32 software is to configure the communication parameters on all DataLink products. The software also permits on-line and off-line diagnostic tests and enables special DL features such as debug and flash memory (firmware) burning. The Windows version of the configuration software must be installed on a computer in order to run. The DOS version can be run from a floppy disk, but runs best when installed on the hard drive.

Configuration program documentation is not provided in this User's Guide as frequent changes to accommodate program and product enhancements would make the information obsolete. To access DataLink program documentation, see the "Technical Documents" folder on the compact disks shipped with all new units.

5.2 DL2 AND DL32 PROGRAM FUNCTIONS

The DL2 configuration and diagnostic software is a DOS program designed for use with DOS or Windows 3.x operating systems. DL2 operation may be impacted by specific computer, extended/expanded memory and resident program (TSR) configurations. If the DL2 program does not operate as expected it should be run in a clean DOS system using a minimum of entries in the config.sys and autoexec.bat system files.

The DL32 Configuration and Diagnostic software is a 32-bit program designed for Windows 95, Windows 98, and Windows NT operating systems.

Model Selection: To successfully configure a DataLink unit (DL), the specific model type must first be selected. This selection reduces the entries needed in subsequent steps.

Configure Operating Parameters: This selection is used to configure or view a communications parameter file including information such as network address, network speed, BCC/CRC message check etc. The user can either create a new configuration file or can read and edit an existing file. The file may then be saved on disk or transferred to a DL.

Upload Operating Parameters: This selection is used to view the current settings of the unit. It is recommended that you do an upload after configuring the unit to ensure that all parameters have been written to the DL's EEPROM.

On-Line DH+ Diagnostic Tests: On-line diagnostics enable the DL to run tests over an active DH+ network. Selection of On-line tests executes a DOS application called "Diag.exe". Please note that some users may have trouble running DOS applications such as "Diag.exe" under the Windows NT operating system.

Off-line Manager: The DL's BIOS has a built-in firmware utility that works with any terminal emulator program. The Off-line Manager utility enables off-line diagnostic tests and software debug operations. It also permits new firmware to be "burnt" into the DL's Flash memory in order to change or update the DL's installed firmware.

6.0 MODES OF OPERATION

DL3000s (DLs) have two modes of operation: On-line and Off-line.

The On-line mode is the normal operational mode of the DL that permits it to communicate on an active network. In this mode the DL can also be used with an included test program to perform On-line diagnostic tests over an active DH+ network. The On-line mode is entered after DC power is cycled to the unit, upon pushing its **Reset** button, or after a software reset is initiated from the "Off-line Manager."

In Off-line mode the DL is inactive on the communications network. The DL's **Configure** pushbutton puts the DL Off-line and initiates the DL's BIOS program. Using DataLink's configuration software, the DL's operating parameters can then be configured. Other tools available in this mode include internal diagnostic tests, system debug commands and the ability to "burn" a new flash firmware program.

The DL's LED lights indicate on-line communications activity, the current mode of operation, and error detection. A functional description of the LEDs can be found in section 3.3.

6.1 ON-LINE MODE AND HARDWARE RESET

DL3000 products contain one or more operational protocols to enable each device to connect to different networks and devices. For example the DL3000-KFR model contains two protocols enabling it to connect to either Data Highway Plus (DH+) or Remote I/O Link (RIO) networks.

In On-line mode the DL performs the normal interfacing, controlling, protocol conversion, and data translation functions required to interconnect devices and networks. In this mode DataLink application software can also perform On-line tests such as Who Active and Data Loopback Diagnostics on an active DH+ network.

A DL unit is automatically reset to On-line mode by cycling power to the unit, by pressing the **Reset** button, or by sending a software reset command from the "Off-line Manager."

6.2 OFF-LINE MODES

Pressing the **Configure** pushbutton places the DL in Off-line mode and under control of its internal BIOS program. In this mode, communication parameters can be configured, system debug commands and RAM memory dumps can be executed, and new firmware can be written to flash memory.

While in the Off-line mode, the DL is inactive on the network.

6.2.2 CONFIGURATION AND DIAGNOSTIC MODES

Off-line configuration and diagnostic modes are used for the following:

- Writing and reading configuration parameters to/from EEPROM or restoring default values
- Hardware diagnostic checks to test the unit

The DL2 and DL32 configuration software are used to configure DL network communication parameters including station, network and serial port data rates, protocol selection, etc. In addition, the DataLink's BIOS can be used to run Off-line diagnostic tests such as RAM and EEPROM memory tests, LED indicator tests, etc.

6.2.3 OFF-LINE MANAGER UTILITY

To use the Off-line Manager utilities in the DL's BIOS, the user must initiate a terminal emulator program. DataLink software or any standard terminal emulator such as HyperTerminal can be used with the following settings:

Baud Rate: 9600 bps
Parity: None
Data Bits: 8 bits
Stop Bits: 1 bit
Flow Control: XON/XOFF

The user must then press the DL's **Configure** pushbutton which starts its built-in firmware utility. Using the simple text menu that appears in the display window, the user can run resident BIOS functions such as:

- Restoring EEPROM to Factory settings
- Writing new operating firmware in Flash memory
- Debugging aids for system and custom application software
- View firmware version

The Off-line Debug mode permits the firmware to execute special internal DataLink operating system commands. These commands are typically used for debugging custom application software and for manually reading and writing to the DataLink's RAM and EEPROM memory. These functions also include RAM memory dumps and capturing and displaying communications messages occurring over the synchronous network. Factory default settings can also be restored using this function.

DLs come pre-loaded with operating firmware burnt in Flash memory. The Off-line Flash burn firmware utility permits a new operating firmware program to be loaded from a disk file into the DL's Flash memory.

WARNING: Do not burn firmware that has not been supplied by VoxTechnologies. Doing so may overwrite the BIOS and render the unit inoperable.

APPENDIX 1

DATA FORMATS AND ADDRESS CONVERSION

DataLink products are designed to handle multiple protocols using different data types for address, station number, message length etc.

Examples:

A-B PLC-5: Uses octal for I/O and DH+ station addressing, and decimal for file / word addressing and length etc. PLC programming software generally follows the same convention as for the specific PLC family. Please see your software's documentation for specifics.

A-B SLC 5/04: SLCs and the A-B programming software uses decimal DH+ station number addressing.

Modbus: Modbus protocol uses decimal addressing throughout.

Different data types (radixes) are often used even within the same PLC, which makes it critical to determine which radix is being used at a particular time and is especially important when trying to configure the DataLink to match a particular device's parameters.

The DataLink DL2 and DL32 Configuration and Diagnostic program use octal numbering for parameters such as DH+ station number and RIO rack number address. Off-line and On-line Diagnostics generally use hexadecimal for addressing and data message lengths.

To make conversion easier among the different data types generally encountered, a cross reference table for decimal (DEC), octal (OCT) and hexadecimal (HEX) numbering systems is provided on the following page.

ADDRESS CONVERSION FOR COMMON DATA TYPES

DEC	OCT	HEX	DEC	OCT	HEX
00	00	00	32	40	20
01	01	01	33	41	21
02	02	02	34	42	22
03	03	03	35	43	23
04	04	04	36	44	24
05	05	05	37	45	25
06	06	06	38	46	26
07	07	07	39	47	27
08	10	08	40	50	28
09	11	09	41	51	29
10	12	0A	42	52	2A
11	13	0B	43	53	2B
12	14	0C	44	54	2C
13	15	0D	45	55	2D
14	16	0E	46	56	2E
15	17	0F	47	57	2F
16	20	10	48	60	30
17	21	11	49	61	31
18	22	12	50	62	32
19	23	13	51	63	33
20	24	14	52	64	34
21	25	15	53	65	35
22	26	16	54	66	36
23	27	17	55	67	37
24	30	18	56	70	38
25	31	19	57	71	39
26	32	1A	58	72	3A
27	33	1B	59	73	3B
28	34	1C	60	74	3C
29	35	1D	61	75	3D
30	36	1E	62	76	3E
31	37	1F	63	77	3F

APPENDIX 2

WARRANTY

THIS WARRANTY COVERS:

VoxTechnologies, Corp. (VTC) warrants DL3000 (DataLink) Communication Controller products against defects in materials and workmanship for one (1) year from the date of purchase. This offer only applies to the first end-user and applies only to products that DLT has been paid for. If your DataLink fails to work properly during the warranty period due to a defect in materials or workmanship, VTC will either repair or replace it at no charge for labour or materials. Replacement units can be provided on an exchange basis, and will be either new or reconditioned at VTC's choice.

PROOF OF PURCHASE:

To obtain warranty service, proof of purchase and payment may be required. If you have to make a warranty claim, include a copy of your original receipt or bill of sale showing the date of purchase, and name of the dealer, distributor or O.E.M. from whom you purchased the product.

TO OBTAIN WARRANTY SERVICE:

Warranty service may be obtained by returning or shipping your faulty unit prepaid direct to our nearest repair or manufacturing facility. Telephone, fax or e-mail us and request a Return

Material Authorization (RMA) number and the ship-to address. We require a purchase order in case extra costs outside the coverage of this warranty are incurred to receive, test, repair or return the product.

Shipping the product: Carefully pack and send prepaid and adequately insured. Include information on the fault or complaint, proof of warranty coverage and the RMA number provided by VTC. Direct warranty service is available from the manufacturer during normal business hours.

VTC will prepay regular freight charges for returns within the Continental USA and Canada to return the product to the client for repairs covered by the warranty terms. For returns outside these territories the least expensive shipping method will be used and the costs will be billed to the client. Clients may authorize the use of another shipping method to facilitate delivery and the additional costs will be billed against the purchase order.

WARRANTY LIMITATIONS:

This warranty covers only defects in materials and workmanship on products purchased from VTC and does not cover defects caused by improper use, abuse, accident, acts-of-God, or alteration, modification and upgrade by unauthorized personnel, or improper return shipping, inadequate packing or shipping damage.

REPAIR OR REPLACEMENT IS YOUR ONLY REMEDY:

Your only remedy under this warranty is the repair or replacement of your DataLink product as described above.

VTC will not be liable for any incidental or consequential damages resulting from your use of, or inability to use your DataLink Communications Controller.

IMPORTANT: This warranty gives you specific legal rights. You may also have other legal rights which may vary from place to place.

If a warranty problem is not handled to your satisfaction please call, fax or write to the Technical Support Manager at DataLink Technologies, Inc. with full details of your problem or complaint.

COSTS AND REPAIRS NOT COVERED BY WARRANTY:

VTC requires a purchase order to cover any extra charges incurred that are not covered by the above warranty. This may include items such as: labour, materials, handling, insurance, customs duties, shipping and receiving charges etc.

Shipping address in USA:

VoxTechnologies
301 S. Sherman, Suite 117
Richardson TX 75081 USA

Outside USA, call for shipping instructions:

(972) 234-4343

APPENDIX 3

WARRANTY REGISTRATION FORM

Fill in the following, photocopy and then fax or mail to:

Attn: Marketing / Support Dept.
Company: VoxTechnolgoies
Address: 301 S. Sherman, Suite 117
Richardson, TX 75081 USA
Telephone: (972) 234-4343, Fax: (972) 234-4295

Reference: Registration of DataLink products:

Register the following purchase(s), and in future contact the person responsible below with any technical information, revisions and updates etc.

Model(s): _____ Serial Number(s): _____

Purchased from:

Dealer Name: _____ City: _____

Client Information:

Name: _____ Title: _____

Company: _____ Dept: _____

Address: _____

City: _____ State: _____

Zip/Code: _____ Country: _____

Telephone: _____ Fax: _____

Product Application:

- PC-Notebook
- Laptop
- Desktop
- HMI/GUI
- OEM Equip
- Other _____

Type of Business:

- End-User
- Control Systems Integrator
- Dealer / Reseller
- Distributor
- O.E.M. Manufacturer
- Other _____

Comments and Suggestions: _____

Date: _____

APPENDIX 4

USER NOTES

This section is provided for client use. Please fill out the following information and keep it handy to enable the manufacturer to provide the most effective technical assistance.

DataLink Model(s) _____

DataLink Serial Number(s) _____

Firmware Version: _____

Hardware Version: _____

Config Software Version: _____

Date of Purchase: _____

Purchased From: _____

Technical Contact Name: _____

Company: _____

Address: _____

City, State, Zip: _____

Telephone / Facsimile _____

E-Mail: _____

