

2019

DATA SWITCH DS71-MD4

**BayTech<sup>®</sup>**



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# DS71-MD4 Serial & 56K Modem Host Module



Replaces DS71-MD3, 33.6K modem

# ABOUT THIS DS71-MD4 OWNER'S MANUAL

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This document is applicable to the **DS71-MD4 Serial/Modem Module**. This document provides information required for installing and operating your Bay Tech equipment. It should allow the user to connect to, power up, and access an applications menu where peripheral equipment can be controlled. We recommend reading this manual carefully, while placing special emphasis on correct cabling and configuration. If you have any problems with your installation, please contact a BayTech Applications Engineer at **228-563-7334**, or toll free from anywhere in the United States using **1-800-523-2702** or contact us at our Web Site, [www.baytech.net](http://www.baytech.net).

BayTech manufactures many remote site management power products and data switches. If you would like information on any of these products, please contact BayTech Customer Service at the above numbers or visit our web site.

Conventions used in this manual include:



**CAUTION:** This term is used to denote any condition that could possibly result in physical harm to personnel or damage to equipment.



**IMPORTANT:** This term is used to denote conditions that could result in the loss of communications or to highlight the proper functioning of equipment.



**NOTE:** This term is used to denote items of interest to the user.

**<cr>:** Carriage Return or ENTER

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Bay Technical Associates, Inc does not assume any liability that may occur due to the use or application of the product(s) or circuit layout(s) described herein.

## COMPLIANCE STANDARD

BayTech units are in accordance with the general requirements of *Standard for Information Technology Equipment* (ETL listed, conforms to ANSI/UL 60950-1 2<sup>nd</sup> Edition and CAN/CSA C22.2 No. 60950-00. CE conforms to IEC 60950.) *Equipment installations are to be in accordance with the Canadian Electrical Code, Part I, CSA C22.1-02; General Requirements – Canadian Electrical, Part II, CSA C22.2 No 0-M91; the National Electrical Code, NFPA 70-2005; and the National Electrical Safety Code, NFPA, IEEE C2-2002.*

We welcome any comments you may have about our products, and we hope that you will continue to look to BayTech for your remote management needs.

## CONNECTION DESCRIPTION

BayTech's DS71-MD4 host communication modem module provides an interface that controls user access to the DS Series data switch and other DS Series connected modules. The DS71-MD4 is a system data controller that directs operations between the base unit, system modules and externally connected devices.



**CAUTION:** All power should be removed from the BayTech unit prior to removing or installing cables and /or adapters.

## EIA-232 SERIAL CONNECTION

The MODULE has an RJ-45 port which uses an 8-pin crossed modular cable to connect to a local EIA-232 device such as a computer terminal or external modem. Most serial computers do not have RJ-45 connections; therefore an adapter is provided with this unit to convert from a DE-9 connector to an RJ-45 connector (Bay Tech Part No. 9FRJ45PC-4). An adapter to convert from a DB-25 connector to an RJ-45 connector is also available from Bay Tech, upon request (Bay Tech Part No. 25FRJ45PC-4). The 8-pin crossed modular cable is configured to operate with these adapters. Configure serial communications parameters for the host terminal to match the DS71-MD4 module. The modules have factory serial communications parameters of 9600 bps, 8 data bits, 1 stop bit, no parity, XON/XOFF disabled

## Internal Modem Communications

A Flash upgradeable 56 Kbps (V.90bis) modem allows standard dial-up telephone lines to be used between the Data Switch installation and the user's location. Using the RJ04X007 (RJ-11) modular cable, connect to "LINE" on the DS71-MD4 module to the Telco wall jack. Using communications software, dial the modem using the ATDT command. **NOTE: Test guarantee for POTS line only.**



**IMPORTANT:** The DS71-MD4 modem option has priority over the EIA-232 serial port. If a serial port user is connected to a DS74 I/O port when a modem is established, the serial port user will be "booted" off, allowing the remote user to communicate with the DS unit. Whichever port user is in the configuration mode, will cause the message to be sent to the other port user, "Configuration Mode in use". Encryption: The modem will transmit encrypted data but will encrypt or decrypt the data.

## Modem LED Descriptions

DS71-MD4 front plate comes with five modem activity LEDs. These LEDs are marked as *TX*, *RX*, *CD*, *OH*, and *CX*. These LEDs are described below.

**TX (Transmit Data):** FLASHES when the modem is transmitting data.

**RX (Receive Data):** FLASHES when the modem is receiving data.

**CD (Carrier Detect):** ON when valid data signal (carrier) from remote modem.

**OH (Off Hook):** ON to indicate the modem is ready to communicate.

**CX (Connection):** ON indicates the modem has a connection to a DS74 port.

## External Modem Communications

Using the 25MRJ45MD-6 adapter (or other applicable adapter) and the RJ08X007 crossed cable, connect the COM (or serial) port of the modem to the RJ-45 port labeled EIA-232 on the DS71-MD4 module. Using an RJ04X007 (RJ-11) modular cable, connect the port labeled "LINE" on the modem to the Telco wall jack. The 25MRJ45MD-6 is **not** shipped with unit but is available upon request at time of purchase.

## INSTALLATION

### Unpacking

Compare the unit and serial number of the equipment you received to the packing slip located on the outside of the box. Inspect equipment carefully for damage that may have occurred in shipment. If there is damage to the equipment or if materials are missing, contact BayTech Customer Support at **228-563-7334** or call toll free inside the United States at **800-523-2702**. At a minimum, you should receive the following:

1. The DS Chassis, DS71-MD4 Host Module and DS74 Modules.
2. Manual insert describing the location of the User's Guide on BayTech's website at [www.baytech.net](http://www.baytech.net).
3. 1 ea. DE-9 (9 pin) PC com port adapter, 9FRJ45PC-1.
4. 1 ea. RJ-45 Roll over cable, RJ08X007 and RJ04X007.



**NOTE:** Keep the shipping container and packing material in the event future shipment is required.

### Preparing the Installation Site

The installation area should be clean and free of extreme temperatures and humidity. Allow sufficient space behind the DS unit for cabling and receptacle connections. Access to installation site should be restricted to authorized personnel. Installation of these units should be limited to ITE and Telco server environments.

#### PRÉPARATION DE L'EMPLACEMENT D'INSTALLATION

Le secteur d'installation devrait être propre et exempt des températures et de l'humidité extrêmes. Permettez le suffisamment d'espace derrière l'unité de DS pour des raccordements de câblage et de réceptacle. L'accès à l'emplacement d'installation devrait être limité au personnel autorisé. L'installation de ces unités devrait être limitée à ITE et à environnements de serveur de Telco.

### POWER

- **208V VAC Model:** Internal 208 VAC 50/60 Hz, 10 Amps Maximum Load.
- **120V VAC Model:** Internal 120 VAC 50/60 Hz, 15, Amps Maximum Load.



**CAUTION:** This unit is intended for indoor use only. Do not install near water or expose this unit to moisture. To prevent heat buildup, do not coil the power cord when in use. Do not use extension cords. Do not attempt to make any internal changes to the power source. Do not attempt to modify any portion or component of DS Series Unit unless specifically directed to by BayTech personnel. BayTech must perform any internal operations.

**ATTENTION:** Cette unité est prévue pour l'usage d'intérieur seulement. N'installez pas près de l'eau ou n'exposez pas cette unité à l'humidité. Pour empêcher l'habillage de la chaleur, ne lovez pas le cordon de secteur en service. N'employez pas les cordes de prolongation. N'essayez pas de n'apporter aucune modification interne à la source d'énergie. N'essayez pas de ne modifier aucune partie ou composant d'une unité de série DS à moins qu'ait spécifiquement dirigé vers par le personnel de BayTech. BayTech doit effectuer toutes les opérations internes.



**CAUTION:** High-voltage surges and spikes can damage this equipment. To protect from such power surges and spikes, this unit must have a good earth ground or good power surge protection.

**ATTENTION:** Les montées subites et les transitoires à haute tension peuvent endommager cet équipement. Pour se protéger contre de telles montées subites et transitoires de puissance, cette unité doit avoir une bonne protection rectifiée ou bonne de la terre de puissance de montée subite.



**CAUTION:** For PERMANENTLY CONNECTED EQUIPMENT, a readily accessible disconnect device (Circuit Breaker rated not to exceed the amperage rating of the unit) shall be incorporated in the fixed wiring between the power source and the Baytech unit. For PLUGGABLE EQUIPMENT, the socket-outlet shall be installed near the equipment and easily accessible. The outlets providing power to the unit shall be protected against over current, short circuit and earth fault by suitable rated protective devices.

**ATTENTION:** Pour l'ÉQUIPEMENT DE MANIÈRE PERMANENTE RELIÉ, un dispositif aisément accessible de débranchement (disjoncteur évalué pour ne pas dépasser l'estimation d'ampérage de l'unité) sera incorporé dans le câblage fixe entre la source d'énergie et l'unité de Baytech. Pour l'ÉQUIPEMENT QUE L'ON PEUT BRANCHER, la douille-sortie sera installée près de l'équipement et facilement accessible. Les sorties fournissant la puissance à l'unité seront protégées contre le courant, le court-circuit et le défaut de terre finis par les dispositifs protecteurs évalués appropriés.

## CABLING

### RJ-45 Cable

#### Control Module RJ-45 pin Signals

Pin	EIA 232 Signal	Signal Direction	Description
1	DTR	Out	Handshake, Line Driver Inactive State = High: +12V when power is applied. Used as a handshake line to enable/disable the receiving of characters.
2	GND		Signal Ground
3	RTS	Out	Handshake, Line Driver Inactive State = High: +12 V when power is applied. Not used to enable/disable.
4	TX	Out	Transmit (Data Out)
5	RX	In	Receive (Data In)
6	DSR	In	Handshake In. -12V when not used
7	GND		Signal Ground, when Jumper JP6-2 is connected to JP6-3. In order for the module to take advantage of "DCD Logon/Logoff" and "Auto Connect Port", Jumper JP6-2 is connected to JP6-1 providing DCD In.
8	CTS	In	Used as a handshake line to enable/disable the receiving of characters.



## Adapter signals

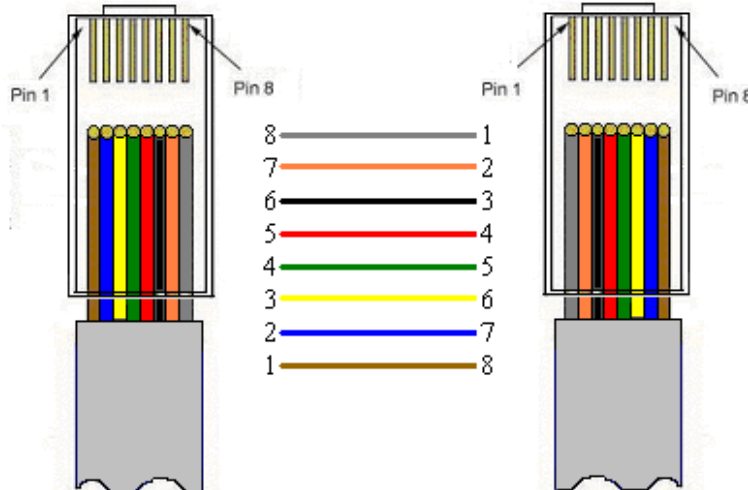
Listed are the pin specifications for the BayTech cable and adapters and the terminal COM ports:

Serial 1: Port Pin out Table

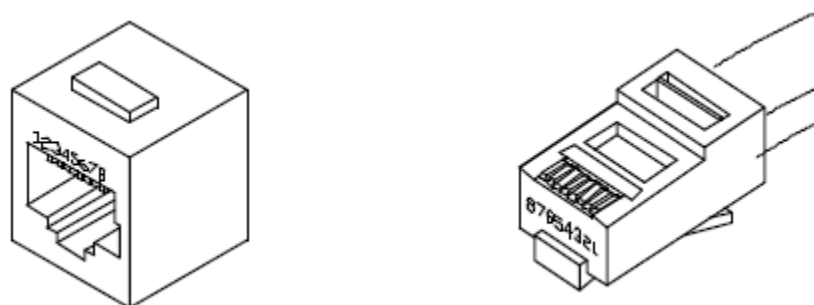
Signal	RS-232 Port (DS)	RS-232 Port (RPC)	COM Port DE-9 Pin	COM Port DB-25 Pin	Signal
DTR	1	1	4	20	DSR
GND	2	2		1	GND
RTS	3	3	7	5	CTS
TXD	4	4	3	2	RXD
RXD	5	5	2	3	TXD
DSR	6	N/C	6	6	DTR
GND	7	7	5	7	GND
CTS	8		8	4	RTS
DTR			4		DCD
DCD		8	1	8	DTR
RI	9			22	

## RJ08X007 Standard Rollover Cable – RJ45 to RJ45

Serial 2: RJ08X007 Pin out

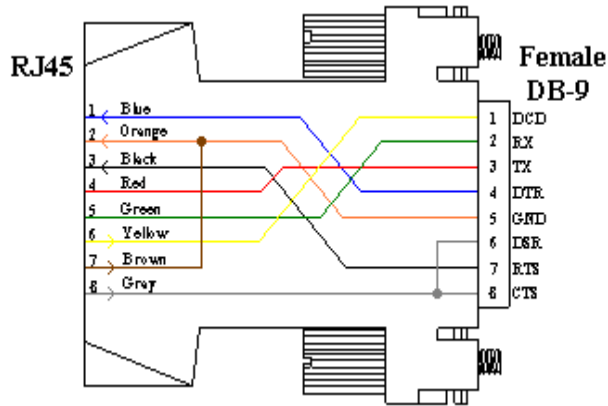


Serial 3: RJ45 Receptacle & Plug

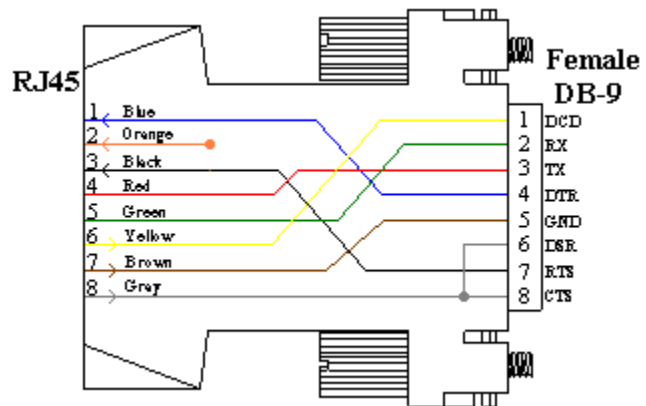


## Adapters

Serial 4: 9FRJ45PC-1 Adapter Pin Out



Serial 5: 9FRJ45PC-4 Adapter Pin out



(Use with RJ08X007 Cable and B/C switch in “B”)

## Serial Setup

- Connect the *9FRJ45PC-4* adapter to the user’s computer
- Connect the MODULE EIA-232 port to the adapter via the *RJ08X007* rolled flat ribbon cable.
- Use terminal emulation software to access the unit, **9600 bps, 8 data bits, 1stop bit and no parity, B/C switch set to ‘B’**.



**NOTE:** At any time during the session you need to go to another menu, use the **Attention Character = semi-colon (;)**. Press the attention character key 5-times to get back to the main status menu.



**NOTE:** Depending on the DS-Series model, the menus will vary according to the number of DS74 modules installed in the unit. If this is not an initial set-up and Password has already been enabled, you are prompted to login. After logging in successfully, invoke the main menu by sending the attention character five times (;;;;;).



**NOTE:** Password feature is case sensitive. (Default is user/password is **root/baytech**)



**NOTE:** All screen shots are valid for **Firmware F2.21**. Not all options are available for all earlier firmware.

## QUICK START: DS71-MD4 SERIES

If this is a new unit shipped directly from Baytech, follow the steps. If this is a previously own unit, perform a factory reset to clear out any users and passwords still in the unit.

### Configuration:

1. Connect to the Serial port (EIA232) using the supplied rollover flat cable and adapter.
2. Use terminal emulation software to access the unit, (i.e. Microsoft Hyper-terminal). Set the PC serial port configuration to the following: **9600 bps, 8 data bits, 1stop bit, no parity, and No Flow Control.**
3. If you get only a blinking cursor Press **'Enter'**. If still only a blinking cursor, Type (5) Attention Characters, (factory default is the semi-colons {;}). The Attention Character will not echo on the screen. There is a one second delay before the menu is displayed. You should see a menu similar to **(Figure 1)**.
4. Select **'C'** for the configuration menu, **(Figure 2)**.
5. Select **'1'** for the DS71-MD4 module, **(Figure 3)**.
6. Select the number for **'Login Setup'** option, **(Figure 4)**.
7. Select the number for **'Manage Users'** option, **(Figure 5)**.
8. **NOTE: The 'admin' user can not be deleted.**
9. Select **'A'** to add a user. Type the name.
10. Select the number of the name just added and to enter their password, **(Figure 6)**.
11. Press **'Enter'** until get to the **'Login Setup Menu'** **(Figure 3)**.
12. Select **'Assign User Ports'** and select a user, **(Figure 7)**. Add a port or add all ports.
13. Press **'Enter'** until get to the **'Login Setup Menu'** **(Figure 3)**.
14. Repeat steps 7-13 to add additional users and to assign ports.
15. Once finished adding users, Press **'Enter'** until get to the **'Login Setup Menu'** **(Figure 3)**.
16. Select **'Access Control'** to enable User and Password prompt **(Figure 8)**.
17. At this point you have the minimum configuration to begin operations. You may wish to make other changes to meet your needs. Press **'Enter'** until you are at the main menu. Type **"T"** to end session
18. Connect the Analog telecom phone line to the modem and test the connection. You will see the same menus as seen in the serial port.

## DS71-MD4 Serial/Modem Controller Configuration:

Figure 1: Network Controller

```
Data Switch Series - F.1.04.00
Bay Technical Associates
Unit ID: DS71-MD4
Attention Character: ;
  Module 1: admin      on Host EIA-232
  Device A           (3, 1).....1
  Device B           (3, 2).....2
  Device C           (3, 3).....3
  Device D           (3, 4).....4
  DS-RPC             (5, 1).....5
  Configuration .....C
  I/O Modules Reset .....RM
  Unit Reset .....RU
  Exit .....X
  Logout .....T
Enter Request :
```

Figure 2: Module Configuration

```
Module Configuration
DS71-MD4           (1)..... 1
DS74                (2)..... 2
DS-RPC             (3)..... 3
Exit.....X,CR
Enter Request :
```

Figure 3: DS71-MD4 Configuration

```
Copyright(C) Bay Technical Associates 2006
DS71-MD4 Data Switch Series - V90 Modem Host Module
Revision F.1.06.00
Module 1

  Status .....1
  Serial Port Configuration .....2
  Port Device Name .....3
  Port Select Code .....4
  Attention Character .....5
  Disconnect Timeguard .....6
  Connect port ID Echo .....7
  Login Setup .....8
  Local Modem Option .....9
  Unit ID .....U
  Exit .....X,CR
```

**Figure 4: Login Setup**

```
Login Setup:
Header .....1
Access Control .....2
Menu .....3
Manage Users .....4
Auto Connect .....5
Dial Back Number .....6
Assign User Ports .....7
Exit .....X,CR
Enter Request :
```

**Figure 5: Manage User**

```
    User Management Menu:
    "admin" ..... 1
    Add New User .....A
    Delete User .....D
    Change User .....C

To change user password, enter number of user
Enter Request :A

Enter User Name (maximum 10 characters): john
```

**Figure 6: User Password**

```
    User Management Menu:
    "admin" ..... 1
    "john" ..... 2
    Add New User .....A
    Delete User .....D
    Change User .....C

To change user password, enter number of user
Enter Request :2

Selected user: john
Enter New Password:****
Re-enter New Password:****
Password Changed successfully!
```

Figure 7: Assign User Ports

```
Assigned User Ports:
+-----+-----* +-M2--M3--+
|User|   Name   \ |1234|1234|
+-----+-----*-----+-----+
|  1 | admin   |1234|1234|
|  2 | john    |    |    |
+-----+-----*-----+-----+

Enter User number:2

Assigned User Ports:
+-----+-----* +-M2--M3--+
|User|   Name   \ |1234|1234|
+-----+-----*-----+-----+
|  2 | john    |...|...|
+-----+-----*-----+-----+

Add Port(s).....1
Remove Ports(s).....2
Add All Ports.....3
Remove All Ports.....4
Exit .....X,CR

Enter Request :1

Enter Module and Port number in format M:P or M,P (0=All): 2:4

Assigned User Ports:
+-----+-----* +-M2--M3--+
|User|   Name   \ |1234|1234|
+-----+-----*-----+-----+
|  2 | john    |...4|...|
+-----+-----*-----+-----+

Add Port(s).....1
Remove Ports(s).....2
Add All Ports.....3
Remove All Ports.....4
Exit .....X,CR
```

Figure 8: Access Control

```
Login Setup:
Toggle setting by entering number, CR to exit.
Access Control:
Serial Port access:
1)...Prompt for User Name: Disabled
2)...Prompt for Password : Disabled
Modem Port access:
3)...Prompt for User Name: Disabled
4)...Prompt for Password : Disabled
Enter Select :
```

# Detail Operations and Configurations



**NOTE:** Depending on the DS-Series model, the menus may vary according to the number of DS74 modules installed in the unit. If this is not an initial set-up and Password has already been enabled, you are prompted to login. After logging in successfully, invoke the main menu by sending the attention character five times (;;;;).



**NOTE:** Username/Password feature is case sensitive. Default is ‘**admin/(blank)**’.

## MAIN MENU



**IMPORTANT:** The Factory default serial communications parameters are **9600 bps, 8 data bits, 1 stop bit, and no parity**.

With a proper serial port connection, upon power-up or unit reset, the following Status menu will be displayed. The number of devices displayed is dependent on the number of DS74 modules installed.



**NOTE:** Only the Admin user will see the Configuration, Unit Reset, and I/O Module Reset options. All users will see only the ports assigned to them, along with ‘Exit’ and ‘Logout’.

### Menu 1: Main Menu

```
Module 2: admin      on Host EIA-232
Device A           (2,1).....1
Device B           (2,2).....2
Device C           (2,3).....3
Device D           (2,4).....4
DS-RPC             (5,1).....5 DS-RPC Chassis ONLY
Configuration .....C Module setup
I/O Modules Reset .....RM Reset all I/O ports
Unit Reset .....RU Resets DS-unit. All internal and external
                    communications are lost
Exit .....X Access to additional menu options
Logout .....T Logout the user
Enter Request :c
```



**NOTE:** Only the Administrator user will see the configuration option.



**NOTE:** If select the “Configure” option and get the following message (Configuration mode in use), the other port has the configuration option selected.



**IMPORTANT:** Any changes made in the Configuration menu will take effect

## CONFIGURATION MENU:

1<sup>st</sup> level of configuration identifies all modules connected to the DS-chassis. The DS74 has the (4) serial ports, May have more than one DS74 listed. DS-RPC are chassis with (4) power outlets.

### Menu 2: Module Configuration

```
Module Configuration
DS71-MD4      (2).....1 Host Module
DS74         (3).....2 I/O EIA232 ports
DS-RPC       (5).....3 DS-RPC Chassis ONLY
Exit.....X, CR
Enter Request :
```

## DS71-MD4 CONFIGURATION MENU:

### Menu 3: DS71-MD4 Configuration

```
Copyright(C) Bay Technical Associates 2006
DS71-MD4 Data Switch Series - V90 Modem Host Module
Revision F.1.01.01
Module 2

Status .....1      Current status of DS71-MD4 module
Serial Port Configuration.....2 Change port config, 9600, 8, 1, none
Port Device Name.....3 Change the name of the device
Port Select Code.....4 Non-Menu, ASCII code to select DS74 port
Attention Character.....5 (;;;;) get Main Menu
Disconnect Timeguard.....6 Delay to see if more data after ';' char
Connect port ID Echo .....7 Enable echo module & port#, device name
Login Setup .....8 Mangle user, Port, Header
Local Modem Option .....9 MD4 options
Unit ID .....U Name the module
Exit .....X,CR Return to previous menu
```

## Status

Select 1), displays the current configuration of the module.

```
Installed Modules :2,3,5
Port Select Code .....$BT
Attention Character .....;
Disconnect Time Guard .....Disabled
Port ID Echo .....Disabled
Unit ID .....DS71-MD4

Local Modem Option:
Rings to Auto-Answer..... 2
Modem Connectivity Timeout.....60 minutes
Modem Inactivity Timeout.....60 minutes
Current Country Code is.....B5

Login Setup:
Header Text .....Enabled
Menu Mode .....Enabled

Auto Connect Module & Port
+---+-----+-----+
|User|   Name   | M: P | Auto  |
+---+-----+-----+
|  1  | admin    | 1: 1 | Disabled |
+---+-----+-----+
```



Status  
continued.

```
Assigned User Ports:
+-----+-----* +-M3--M4--M5--+
|User|   Name   \ |1234|1234|1234|
+-----+-----*-----+-----+
|  1 | admin   |1234|1234|1234|
+-----+-----*-----+-----+

User Dialback Phone number
+-----+-----+-----+-----+
|User|   Name   | Phone number | Dialback |
+-----+-----+-----+-----+
|  1 | admin   |              | Disabled |
+-----+-----+-----+-----+

Dialback Delay.....10 seconds

Access Control:
Serial Port access:
1)...Prompt for User Name: Disabled
2)...Prompt for Password : Disabled
Modem Port access:
3)...Prompt for User Name: Disabled
4)...Prompt for Password : Disabled

Auto Connect Module & Port
+-----+-----+-----+-----+
|User|   Name   | M: P | Auto   |
+-----+-----+-----+-----+
|  1 | admin   | 1: 1 | Disabled |
+-----+-----+-----+-----+

+-----+-----+-----+-----+-----+-----+-----+-----+
|Port|   Port   | Baud | Word | Stop | Parity|Xon/ Xoff|LineDrive|
|   |   Name   | Rate | Size | Bits |      |Xmit|Recv|DTR |RTS |
+-----+-----+-----+-----+-----+-----+-----+-----+
|  1 |Host EIA-232 | 9600 | 8   | 1   | None | Off| Off|High|High|
|  2 |Host V90 Modem | 115.2k| 8   | 1   | None | Off| Off|High|High|
+-----+-----+-----+-----+-----+-----+-----+-----+
```

## Serial Port Configuration

Select 2), from the **Network Configuration Menu** configures Handshaking, Baud Rate, Word Size, Stop Bits, and Parity through either the serial or modem ports using the menus. RTS and DTR Line Drivers can only be configured through the phone line via a modem Xon/Xoff, RTS and DTR Line Drivers can only be configured through the phone line via a modem. The **default settings** are **9600bps, 8 data bits, no parity, one stop bit, Xon/Xoff Off and RTS/DTR High**.



**IMPORTANT:** Communications with the terminal computer connected to the port will be lost until the serial port configuration of the terminal computer matches the unit's serial port.

### Menu 4: Serial Port Configuration

Port	Port Name	Baud Rate	Word Size	Stop Bits	Parity	Xon/Xmit	Xoff/Recv	Line Drive	DTR	RTS
1	Host EIA-232	9600	8	1	None	Off	Off	High	High	
2	Host V90 Modem	115.2k	8	1	None	Off	Off	High	High	

Exit/Save.....1    Set Parity.....5  
 Set Baud Rate..2    Set Xon/Xoff.....6  
 Set Word Size..3    RTS Line Driver...7  
 Set Stop Bits..4    DTR Line Driver...8  
 Enter Request :

### Exit/Save

Select 1), from the **Serial Port Configuration Menu** to exit without saving or to save changes. If changes were made the unit reminds you to change the PC serial port to the same configuration. If you take more than 20-seconds to make the PC changes, the module will abort the changes.

Change Host Device to Match NEW Configuration  
 Before Answering this Request  
 Accept Changed ? (Y/N):  
 Change is aborted !

**NOTE:** Open two sessions. 1<sup>st</sup> session connect to the module and second session with the new configurations but do not connect. Make changes to the module in 1<sup>st</sup> session and select-1 to save, when you see above comments, click on 2<sup>nd</sup> session and type 'Y'. The 2<sup>nd</sup> session should connect to the module. If you type anything other than 'Y' the module will Abort changes.

### Set Baud Rate

Select 2), from the **Serial Port Configuration Menu** changes the transfer rate of Data bits per second for the serial port, **Default is 9600**

" 300 " .....1  
 " 600 " .....2  
 " 1200 " .....3  
 " 2400 " .....4  
 " 4800 " .....5  
 " 9600 " .....6  
 "19200 " .....7  
 "38400 " .....8  
 "57600 " .....9  
 "115.2k" .....A  
 Enter Select :

## Word Size

The word size is the measurement of the actual data bits in a transmission. Which setting you choose depends on what information you are transferring. For example, standard ASCII has values from 0 to 127 (7 bits). Extended ASCII uses 0 to 255 (8 bits). If the data being transferred is simple text (standard ASCII), sending 7 bits of data per packet is sufficient for communication. A packet refers to a single byte transfer, including start/stop bits, data bits, and parity.

**Select 3), from the Serial Port Configuration Menu changes the Word Size, Default is 8**

```
" 5 " .....1
" 6 " .....2
" 7 " .....3
" 8 " .....4
Enter Select :
```

## Stop Bits

The Stop Bits are used to signal the end of communication for a single packet. Since the data is clocked across the lines and each device has its own clock, it is possible for the two devices to become slightly out of sync. Therefore, the stop bits not only indicate the end of transmission but also give the computers some room for error in the clock speeds. The more bits that are used for stop bits, the greater the lenience in synchronizing the different clocks, but the slower the data transmission rate.

**Select 4), from the Serial Port Configuration Menu changes the Stop Bits, Default is 1**

```
" 1 " .....1
" 2 " .....2
Enter Select :
```

## Parity

Parity is a simple form of error checking used in serial communication. For even and odd parity, the serial port will set the parity bit (the last bit after the data bits) to a value to ensure that the transmission has an even or odd number of logic high bits. For example, if the data was 011, then for even parity, the parity bit would be 0 to keep the number of logic high bits even. If the parity was odd, then the parity bit would be 1, resulting in 3 logic high bits. This allows the receiving device to know the state of a bit so as to enable the device to determine if noise is corrupting the data or if the transmitting and receiving devices' clocks are out of sync.

With no parity selected, it's assumed that there are other forms of checking that will detect any errors in transmission. No parity also usually means that the parity bit can be used for data, speeding up transmission. In modem-to-modem communication, the type of parity is coordinated by the sending and receiving modems before the transmission takes place.

**Select 5), from the Serial Port Configuration Menu selects the Parity, Default is None**

```
" None " .....1
" Even " .....2
" Odd " .....3
Enter Select :
```

## XON/XOFF

For a simple communication between modems three connected lines are needed: TX, Rx, and Ground. For the data to be transmitted, both sides have to be clocking the data at the same baud rate. While this method is sufficient for most applications, it is limited in being able to respond to problems such as the receiver getting overloaded. This is where serial handshaking can help. **XON/XOFF** is software data flow communications protocol for controlling the flow of data between Baytech and other devices. Baytech units will send an XOFF character when it can't take any more data and when it can once again take more data, will send an XON character to the transmitter.

Select "Xon/Xoff" the DS displays the following, **Default is Off**:

```
Output Flow Control (Xmit) - Xon/Xoff is ( Off )
Stop/Restart Output Upon Receiving of Xoff/Xon ? (Y/N) :

Input Flow Control (Recv) - Xon/Xoff is ( Off )
Xoff/Xon sent based on Buffer - Full/Empty condition ? (Y/N) :
```

## RTS/DTR Line Driver Inactivity State

RTS (Request to Send)/ DTR (Data Terminal Ready) is normally used in conjunction with an external modem. With no modem the RTS and DTS **default state is High**.

Select 7), from the Serial Port Configuration Menu changes the RTS driver state, **Default is "High"**

```
RTS Line Driver Inactive State is: High
High ? (Y/N, CR for no change):
```

Select 8), from the Serial Port Configuration Menu changes the DTR driver state, **Default is "High"**

```
DTR Line Driver Inactive State is: High
High ? (Y/N, CR for no change):
```

Type "Y" for YES or "N" for NO and press 'Enter'.

## Port Device Name

Select 3, from the Configuration Menu allows the serial or modem port to be renamed. Type the port number and press 'Enter'.

```
Module 1 Device Name :DS71-MD4
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| Port | Port      | Baud  | Word  | Stop  | Parity | Xon/  | Xoff  | LineDrive |
|      | Name      | Rate  | Size  | Bits  |        | Xmit  | Recv  | DTR  | RTS  |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
|  1  | Host EIA-232 | 9600  | 8     | 1     | None  | Off   | Off   | High  | High |
|  2  | Host V90 Modem | 115.2k | 8     | 1     | None  | Off   | Off   | High  | High |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+
Enter Host Device Number (1-2) :
```

Type the new name for the port, (**Max 16 Characters**) and press 'Enter'.

```
Enter New Port Name (Max. 16 characters):
or press ENTER for no change .....
```

## Port Select Code

The Port Select Code is an ASCII character string sent by the host terminal to the module to select an I/O port on a DS74 peripheral module. **Select 4, from the Configuration Menu** changes the Port Code. The code is programmable up to 8 characters. **Factory default is \$BT**.

```
Port Select Code :$BT
Change It ? (Y/N) :
```

## Attention Character

Pressing the Attention Character 5 consecutive times will access the network main menu. **Select 5, from the Configuration Menu**, to change the attention character. The unit displays the following: **The Default is a semi-colon (;)**.

```
Attention Character ;;
Change It ? (Y/N) :
```



**NOTE:** If you change the attention character and forget which letter or symbol you selected, the attention character will not echo if you are typing the correct character. You can type each character/symbol on the keyboard to find it, or reset the module to factory default to get the semi-colon back.

## Disconnect Timeguard

**Select 6, from the Configuration Menu**, ensures reliable binary data transmission by providing a one-second “Timeguard” after the unit receives the attention character. If more data is received within the delay period, the unit treats the character as data, not an attention character; thereby preventing unwanted port disconnection.

**The Default setting is Enabled.**

```
Disconnect Time Guard is..... Disabled
Enable ? (Y/N), CR for no change) :
```

## Connect Port ID Echo

**Select 7, from the Configuration Menu**, set the port identification. The unit displays the Port ID Echo Menu.

```
Port ID Echo is.....Disabled
Change It ? (Y/N) :

Disable Port ID Echo.....1
Use Module, Port Number.....2
Use Port Name.....3
Enter Select :
```

**Select 1)**, to disable the echo. **The Default setting is Disabled.**

```
The unit displays: (blank)
```

**Select 2)**, to echo the module and port number.

```
The unit displays:
      BAYTECH

For further information check:
http://www.baytech.net/

02,1
```

**Select 3)**, to echo the port name.

```
The unit displays:
      BAYTECH

For further information check:
http://www.baytech.net/

DS71-MD4
```

## Login Setup Menu

Select 8, from the Configuration Menu, allows the admin user to enable or disable the Header, Access Control, Menu, Manage Users, Auto-Connect, Dialback Number and Assign User Ports. Depending on the firmware installed the Login Setup menu may be slightly different than what is shown. **NOTE:** The modem will hang up and pause for 10 seconds after (3) FAILED logins.

### Menu 5: Login Setup

```
Login Setup:
Header .....1 Enable/Disable header for each menu
Access Control .....2 Enable/Disable Network/Serial port user name
and password.
Menu .....3 Enable menu on startup or 5 attention Char.
Manage Users .....4 Add/Delete users and change passwords.
Auto Connect .....5 Auto connect to module and port on power-up,
Has priority over setup menu, Disables the
menu selection screen on initial login.
Dial Back Number .....6 Have the modem to dial back the user
Assign User Ports .....7 Assign users to specific ports
Exit .....X,CR Returns to previous menu
Enter Request :
```

## Header

Select 1, from the Login Setup Menu, If enabled, the following header appears with the main menu upon initialization of power or after a modem connection to the host module has been established. If disabled, the header does not appear with the main menu. **Default Header is enabled.**

```
Copyright(C) Bay Technical Associates 2006
DS71-MD4 Data Switch Series - V90 Modem Host Module
Revision F.1.01.01
Module 2
```

```
Header Text :Enabled
Enable ? (Y/N, CR for no change):
```

## Access Control

Select 2, from the Login Setup Menu, this security feature allows the admin to enable or disable usernames and passwords for both modem and serial port access. **Default is Disabled.**

Type the number and press 'Enter', that selection will change the current setting

```
Access Control:
Serial Port access:
1)...Prompt for User Name: Disabled
2)...Prompt for Password : Disabled
Modem Port access:
3)...Prompt for User Name: Disabled
4)...Prompt for Password : Disabled
Enter Select :
```



**IMPORTANT:** Before you enable the password for either Serial Port or Network access, verify the admin password is known, or you could create a lockout condition. If the password lockout condition occurs, you will need to reset the DS71-MD4 host module to the factory defaults **Default username/password is (root/baytech), all lower case.**

## Menu

Select 3, from the Login Setup Menu, this allows the admin to enable or disable the Menu on start up. If disabled, the header appears upon login without the main menu. To invoke the main menu when disabled, enter the attention character five times (;;;;;).

```
Menu Mode :Enabled
Enable ? (Y/N, CR for no change):
```

## Manage Users

Select 4, from the Login Setup Menu, to allow the administrator to add/delete users, change user passwords and rename users. Usernames and passwords are case sensitive and alphanumeric. The admin user can not be removed.

### Menu 6: Manage Users

```
User Management Menu:
"admin" ..... 1
Add New User .....A
Delete User .....D
Change User .....C

To change user password, enter number of user
Enter Request :1
```

Select the User's number to change user passwords.

```
Selected user: admin
Enter New Password:
Re-enter New Password:
Clear Password (Y/N) ? :n
```

Select 'A', adds a new user. User name is case sensitive

```
Enter User Name (maximum 10 characters):
```

Select 'D', deletes a user by typing the user number.

```
From menu above, enter number for User to delete:
```

If you try to delete the 'admin' user the module will respond:

```
Input error: deletion of admin user not allowed.
From menu above, enter number for user to delete>
```

Select 'C', to rename a user.

```
From menu above, enter number for user to edit:2
Selected user: CAD Eng
Enter new User Name(maximum 10 characters): Engineer
Change username from "CAD Eng" to "Engineer" (Y/N) ?:
```

## Auto-Connect

Select 5, from the Login Setup Menu, allows the admin to select the module and port that the user will be automatically connected on dial-in. The auto connect port has priority over the login setup menu enable/disable selection, thus prevent the menu selection screen from appearing at the initial login sequence

```
+-----+-----+-----+-----+
|User|   Name   | M: P |  Auto  |
+-----+-----+-----+-----+
|  1 | admin    | 1: 1 | Disabled|
+-----+-----+-----+-----+
Dial-in Auto Connect Port .....1
Enabled/Disable .....2
Exit .....X,CR
Enter Request :1
```

## Dial-Back Numbers

Select 6, from the Login Setup Menu, this feature allows user to dial in, hang up and the unit dials the assigned number back when using a secure phone line. Select a user number and the module displays the following:

### Menu 7: Dial Back

```
User Dialback Phone number
Dialback Delay:10 seconds
+-----+-----+-----+-----+
|User|   Name   | Phone number | Dialback |
+-----+-----+-----+-----+
|  1  | admin    |              | Disabled |
+-----+-----+-----+-----+
Phone number .....1
Dialback option .....2
Dialback Delay .....3
```

Select 1, "Phone number" option to enter a phone number assigned to the user.

```
Dial back Phone number is .....
Enter new Phone number (<= 15 digits):
```

Select 2, "Dial-back" option to enable or disable the dial back feature. **Default is Disabled.**

```
Dial back option is.....Disabled
Enable ? (Y/N, CR for no change):
```

Select 1, "Dial-back Delay" option to set the amount of delay time before the unit dials the phone number assigned to the user. **Default is 10 seconds**

```
Dialback Delay:10 seconds
Enter Dialback Delay (1 to 60):
```

## Assign User Ports

Select 7, from the Login Setup Menu, Allows the administrator to assign ports to users. Module displays list of assigned users. Type the number of the user to add or delete ports.

```
Assigned User Ports:
+-----+-----* +-M2-+-M3-+
|User|   Name   \ |1234|1234|
+-----+-----*-----+-----+
|  1  | admin    |1234|1234|
|  2  | cat      |1...|1...|
+-----+-----*-----+-----+
Enter User number:
```

Type the option number to add a few ports, remove a few ports, add all port, or remove all port.

```
Assigned User Ports:
+-----+-----* +-M2-+-M3-+
|User|   Name   \ |1234|1234|
+-----+-----*-----+-----+
|  2  | cat      | 1  | 1  |
+-----+-----*-----+-----+
Add Port(s).....1
Remove Ports(s).....2
Add All Ports.....3
Remove All Ports.....4
Exit .....X, CR
Enter Request : 1
```

Select 1, to add individual ports.

```
Enter Module and Port number in format M:P or M,P (0=All): 2,3
```

Unit responds with module-2 and port -3 selected

```
Assigned User Ports:
+-----+-----* +-M2-+-M3-+
|User|   Name   \ |1234|1234|
+-----+-----*-----+-----+
|  2  | cat      |1.3.|1. .|
+-----+-----*-----+-----+
```



Select 2, to remove individual ports.

Enter Module and Port number in format M:P or M,P (0=All): 2:3

Unit responds with module-2 and Port-3 de-selected

```

Assigned User Ports:
+-----+-----* +-M2-+-M3-+
|User|   Name  \ |1234|1234|
+-----+-----*-----+-----+
|  2 |  cat   | 1. .|1. .|
+-----+-----*-----+-----+

```

Select 3, to add all ports.  
Unit responds with all ports selected

```

Assigned User Ports:
+-----+-----* +-M2-+-M3-+
|User|   Name  \ |1234|1234|
+-----+-----*-----+-----+
|  2 |  cat   |1234|1234|
+-----+-----*-----+-----+

```

Select 4, to remove all ports.  
Unit responds with all ports de-selected

```

Assigned User Ports:
+-----+-----* +-M2-+-M3-+
|User|   Name  \ |1234|1234|
+-----+-----*-----+-----+
|  2 |  cat   |.. .|.. .|
+-----+-----*-----+-----+

```

### Local Modem Option

#### Menu 8: Local Modem

Select 9, from the Configuration Menu to set up the modem response.

```

Local Modem Option:
Rings to Answer .....1
Connectivity Timeout .....2
Inactivity Timeout .....3
Country Code .....4
Exit .....X,CR
Enter Request :1

```

Select 1, for the “Rings to Answer” to set the number of rings before the unit answers. The default setting is 2.

Rings to Auto Answer: 2  
Enter number (1-4):

Select 2, for the “Connectivity Timeout” option to set the continuous connectivity time (5 to 255 minutes) before the modem automatically disconnects. Entering a time of 0 disables the Connectivity Timeout. The timer starts when the modem answers (DCD goes high). The modem will disconnect, regardless of activity, when time runs out. Default setting is 60 minutes.

Modem Connectivity Timeout:60 minutes  
Change It ? (Y/N) :

Select 3, for the “Inactivity Timeout” option to set the time the modem will automatically disconnect, if there is no activity equaling the programmed amount of time (1 to 120 minutes). Default setting is 0 (disabled).

Modem Inactivity Timeout:60 minutes  
Change It ? (Y/N) :

**Select 4**, for **“Country Code”** This option sets the modem to recognize the countries Telecomm Requirements, i.e. ring tone, dial tone.

```
Typical Country Code:
Argentina.....07  Australia.....09  Austria.....FD  Belgium.....FD
Brazil.....16  Canada.....B5  Chile.....99  China.....B5
Czech Re.....FD  Denmark.....FD  France.....FD  Germany.....FD
Greece.....FD  Hong Kong.....99  Hungary.....FD  Iceland.....FD
India.....99  Indonesia.....99  Israel.....B5  Italy.....FD
Japan.....00  Korea Re.....B5  Lithuania.....FD  Malaysia.....6C
Mexico.....B5  Netherlands....FD  New Zealand....7E  Norway.....FD
Philippines...B5  Poland.....FD  Portugal.....FD  Romania.....FD
Russian Fe....FD  Singapore.....9C  Slovenia.....FD  Spain.....FD
Sweden.....FD  Switzerland....FD  Taiwan.....FE  Thailand.....B5
Turkey.....FD  United Kingdom.FD  United States..B5

Current Country Code is:B5
Change It ? (Y/N) :y
```

Type a **“Y”** and press ‘Enter’ than type the two-characters for the desired country code.

```
Enter 2 digits Country Code : b5

Current Country Code is:B5
```

If your country is not listed, select a country closest to your country or a country you know for sure that the telecommunication system is closest.

### Unit ID

**Select U**, for **“Unit ID”** This option is used to change the Host Module’s name.

Type **“Y”** to change the name, up to 63 characters, (alpha and numeric characters only).

```
Unit ID :DS71-MD4
Change It ? (Y/N) : Y
Enter Unit ID (63 chars. max.) :
```

## I/O MODULES RESET

**Select “I/O Modules Reset”**, followed by **“Enter”**, to reset the communications to the DS74 modules. A successful reset the unit responds:

```
I/O Modules Reset Successfully
Strike any Key to Continue
```

If another user is connected to a DS74 port, the module will ask if you want to override the other user, the unit responds:

```
Other User Connected, Override ? (Y/N, Enter): y
I/O Modules Reset Successfully
Strike any Key to Continue
```

## UNIT RESET

Select **“Unit Reset”**, to reset the communications of the DS71-MD4 module.

Reset the unit (Y/N)?:y

If you are connected to the serial port, after 10 seconds you will see the following:

Initializing System Please Wait .....

Unit reset terminates both internal and external modem connections. If you are connected via the modem, you will lose the connection. Wait 20 seconds then reconnect.



**NOTE:** You must be connected to the DS71-MD4 Main Menu to reset the unit. This will not default the unit to factory defaults.

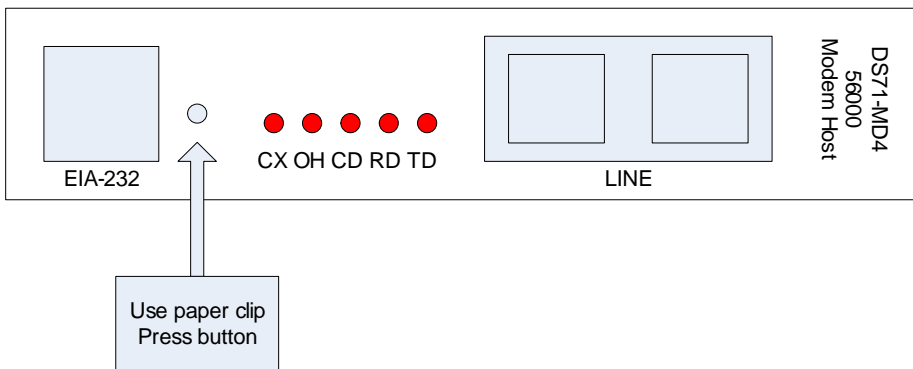
## EXIT

This will exit the menu but not the module. Typing **“HELP”** will give you a list of Line Commands for scripting. These commands have menu options to select. If there is a need to upgrade the firmware, Baytech Support will provide instructions to upgrade the firmware.

## LOGOUT

Select **T)**, will close the session to the modem.

## FACTORY DEFAULT PROCEDURE



1. Press and hold reset button as you power cycle the module.
2. Continue to hold button for 10 seconds, then release button.
3. Use Terminal program into the serial port if not already doing so.
4. If no opening menu, Type 5 semi-colons.
5. If appears not to work repeat reset procedure except hold button for 15 seconds.

### 1. No menu serial port:

- a. DS power is on and cable connected to EIA232 serial port.
- b. Verify computer serial port configuration; **9600, 8, none, 1, no flow**
- c. Verify the cable and adapter has the correct pin out, RJ08X007 and 9FRJ45PC-1.
- d. Cisco Rollover cables have the same pin out as RJ08X007.
- e. Type 5(;), the Attention Character will not echo to the screen, if it does than it may have been changed to a character other than the semi-colon.
- f. Test the cables and adapter with a working Baytech device,
- g. Turn power off, reseal the DS71-MD4 module and power on,
- h. Install module in a working DS-series unit and test,
- i. Reset the DS71-MD4 to factory defaults, username/password = root/baytech.

### 2. Password not Work:

- a. Password is case sensitive, check for Caps Lock.
- b. Have the admin user delete the user and add back

### 3. No Access to Configuration Menu:

- a. Only one user at a time can have access. Have the other user back out of the configuration

### 4. No Ports displayed for User:

- a. Ports have to be assigned to the user, refer to 'Login Setup: Assign User Ports'

### 5. Not able to Connect to Modem.

- a. Verify you see or hear the modem negotiating
- b. Verify the telecommunications line is a true analog line and not a digital converted to analog
- c. .If the modem negotiates then drops the call, serial into the unit. Verify the Country Code for the modem is set for the local country code.

### 6. Verify DS-chassis, Host Module, and DS74 is functioning:

A rollover cables (pin out 1-8, 2-7, 3-6, 4-5, 5-4, 6-3, 7-2, 8-1) and a 9-pin adapter (9FRJ45PC-1) and Modem cable.

- a. Set up the Host module with modem or Ethernet cables for normal operations.
- b. Connect the rollover cable and adapter from the PC to a DS74 port.
- c. Create a Modem/Ethernet session, (Hyper-terminal). Type semi-colon 5-times (; ; ; ; ;).
- d. The main menu should display the DS74 ports. Select the port connected to the PC from step "b". The cursor will move to next line and wait.
- e. From your PC create a terminal session to the serial port. Default setting is 9600, 8, 1, no parity, no flow.
- f. Type several random characters to see them echoed in the telnet/modem session.
- g. Select the telnet/modem session and type several random characters to see them echoed in the PC serial session.
- h. This verifies the Chassis, Host module, and the I/O port is working.
- i. Move pc cable to next DS74 port and repeat steps (c-h).

If you have done all of the above steps that are possible and still have problems, contact Baytech Technical Support at 228-563-7334.

## BAYTECH PRODUCT WARRANTY

Bay Technical Associates (BayTech) warrants that its products will be free from defects in materials and workmanship under normal use for a period of two years from date of purchase (or from date of shipment from BayTech if proof of purchase is not provided).

During this warranty period, BayTech shall, at its discretion, either repair or exchange any defective product at no charge for labor and materials, or refund the amount paid for the product, less shipping and handling charges. Any replacement and/or repaired products are warranted for the remainder of the original warranty.

The customer is responsible for properly packaging the product and for shipping costs for returns. The customer is liable for loss or damage to the product during shipping, as well as any other fees or charges associated with transporting the product back to BayTech. BayTech will pay return costs for delivery within the Continental United States.

All repair and return shipments must be approved by BayTech and must be accompanied by an RA (return authorization) number. Please refer to our Repair and Return Policy below.

For the initial 30 days from the original date of shipment, any unopened product may be returned to BayTech, accompanied by an RA number. Full purchase price will be refunded, provided that the product is in excellent condition. A product may not be returned after 30 days from the original date of shipment unless approved by BayTech management.

For additional information or more specific warranty issues, contact BayTech's Technical Support or Customer Service Departments at (800) 523-2702 or (228) 563-7334.

### Exceptions

This warranty does not cover misuse or minor imperfections that fall within design specifications or that do not materially alter functionality. BayTech does not warrant and is not responsible for damages incurred in shipping and handling or caused by disasters (such as fire, flood, wind, earthquake, lightning, power surges or water).

The warranty will be voided regarding products that have been neglected, altered, abused, misused, or used for purposes other than those for which it was designed.

Under no circumstances shall BayTech be liable for any special, incidental, or consequential damages based upon breach of warranty, breach of contract, negligence, strict liability, or any other legal theory. Such damages include (but are not limited to) loss of profits, loss of the product or associated equipment, cost of capital, cost of substitute or replacement equipment, facilities or services, down time, purchaser's time, the claims of third parties, including customers, and injury to property.

### BayTech Extended Warranty

Extended warranties and but only at the time of product purchase. The extended warranty cost will not exceed 7% per year of the product list price unless otherwise stated in the customer contract or approved by BayTech management. Contact BayTech for further details on this.

## Technical Support

BayTech offers Tech Support for the lifetime of the product. A staff of Applications Engineers is on duty to assist with installation, set up or operation issues. Support is available from 8:00 a.m. to 5 p.m. (CST or CDT), Monday through Friday at the phone numbers or website provided below.

Please have the following information available to help the Applications Engineers answer questions efficiently:

- BayTech model type
- Unit serial number
- Firmware version (if accessible)  
A list of devices connected to the BayTech unit
- A general description of the application being used and the intended outcome
- Information about cables and adapters being used (type, length, place of purchase)
- The name of the software emulation program being used
- Printout of the configuration status (if possible)

Bay Technical Associates, Inc.  
5239 A Avenue  
Long Beach Industrial Park  
Long Beach, MS 39560

Telephone: 800-523-2702 or 228.563.7334  
FAX: 228.563.7335  
Email: [support@baytech.net](mailto:support@baytech.net)  
Website: [www.baytech.net](http://www.baytech.net)

## Repair Policy

*(Return policy refers to BayTech products purchased and returned for credit or repair.)*

A Return Authorization (RA) number must be obtained in all cases before returning the BayTech product. Have the **serial number** and **reason for the return or description of the problem handy**. Customers in the Continental U.S. can call 1-800-523-2702 or international customers can call 228.563.7334 to obtain an RA number.

Before dismantling equipment or returning the unit for any reason, *always contact BayTech*. Attempting to repair a product without BayTech authorization may result in voiding the warranty.

Cost and Time:

The cost of repair for units no longer under warranty will be \$50.00 per hour plus cost of materials and shipping. Typical turnaround times for repairs are 3 days for domestic requests and 5 days for international.

Follow the instructions below for repackaging and shipping. **NOTE: Power should be disconnected from the power source before servicing or dismantling.**

## Return Authorization Process:

- a. Contact BayTech via Phone, Fax, or Email to get a Return Authorization (RA) Number.  
*IMPORTANT: BayTech will not accept any returns without an RA number.*
- b. Package the unit carefully in its original packaging or similar packaging. The warranty does not cover damage sustained during shipment. Enclose a letter with name, address, RA number, daytime phone number and description of the problem.
- c. Mark the RA number clearly on the outside of the package.
- d. Ship the unit by insured, prepaid carrier to the following address:

Bay Technical Associates  
5239 A Avenue  
Long Beach Industrial Park  
Long Beach, MS 39560  
RA #: 140-xxxxx