

ROTRONIC Wireless Devices

Master Reset and Configuration Settings

Overview.....	2
Preparations	2
Network information	2
Wireless router settings.....	2
Digi Device Discovery.....	3
New device from the factory.....	4
Master reset.....	4
Digi Web Interface	5
Login.....	5
Doing a Master Reset.....	6
Warning	6
Procedure	6
Default configuration after a master reset	7
IP Settings.....	7
Wireless LAN Settings	8
Serial Ports.....	9
Serial Port Configuration after a Master Reset.....	10
TCP Server Settings (TCP Sockets)	12
Basic Serial Settings	13
Advanced Serial Settings	14
Wireless Security.....	15
Changing the Web Server User Name and Password	17
Changing the Baud Rate of the ROTRONIC Device.....	19
Troubleshooting Tips	19

Overview

The ROTRONIC wireless devices (wireless Ethernet LAN) use an internal server module from Digi International (Digi Connect WI-ME). This technical note provides instructions regarding the configuration settings that should be used in the event that a master reset of the Digi module becomes necessary. The configuration settings for a factory new ROTRONIC wireless device can easily be derived from these instructions.

Preparations

The following preparations apply both to the situation of a master reset and a new factory device.

Network information

- The subnet mask of your network
- The local IP address of your wireless router
- An unused static IP address that is compatible with your network (required only when a static address will be used)

Wireless router settings

Note: it is highly advisable to use a cable connection between the wireless router and the PC used to configure both the router and the Digi Connect WI-ME module. If using wireless communication between your PC and the router, you will have to temporarily make changes to the PC in order to keep communicating with the router. This may create yet another level of potential problems.

Prior to first time use or following a master reset of the ROTRONIC wireless device, you should access your wireless router web server and check / modify the following configuration settings on your wireless router:

- Wireless network mode: (802.11b or 802.11g or both). Setting the router to Both is recommended.
- Wireless channel (6 - 2.437 GHz or 5 - 2.432 GHz, etc.). All devices connected to the wireless network should use the same channel in order to communicate. Channels 5 and 6 are the most frequently used. **By default the Digi Connect WI-ME is configured to auto-scan all wireless channels. This configuration setting should not be changed.**
- Temporarily remove any network name (SSID) since all devices connected to the wireless network must share the same SSID in order to be able to communicate. To verify that the router does not make use of any network name, you may want to temporarily enable network name broadcast.
- Temporarily disable all wireless security setting on your wireless router such as WEP security mode or other. Not disabling wireless security will prevent integration of the Digi module with your network (device detection and communication will be not possible).
- Set Authentication Type to **Auto** (Linksys WRV54G > Wireless > Advanced Wireless Settings)

Digi Device Discovery

A device discovery utility (**Digi Device Discovery**) is provided in the HW4 installation directory (usually, C:\Program Files\HW4).

The Digi Device Discovery utility can be started using any of the following methods:

- In the HW4 installation directory, double click with the mouse on the file **dgdiscvr.exe**
- In the HW4 main menu bar, click on Settings and Tools > Ethernet Configuration Tool

Whether the ROTRONIC wireless device is factory new or has been reset, it is unlikely that the device IP settings are compatible with your LAN. Digi Device Discovery is supposed to detect devices even in that situation and should display the warning “Not properly configured”.

IP Address	MAC Address
! 192.168.59.231	00:40:9D:24:60:3D

NOTES:

Should Digi Device Discovery fail to detect your wireless device(s), you may want to try using the HW4 main menu bar > Devices and Groups > Search for Ethernet Masters.

In the right pane of Digi Device Discovery, right click with the mouse on the device to be configured.

New device from the factory

In the right pane of Digi Device Discovery, right click with the mouse on the device to be configured. A small menu appears. Select “Configure network settings”. Initially, you should select “obtain network settings automatically”. If you want to use a static IP address, you may want later on change this selection to “Manually configure network settings” and enter the desired address without changing the subnet mask and the IP address of the gateway (this is the LAN IP address of the router).

Configure Network Settings

The network settings can be assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate network settings.

Device: Digi Connect ME
MAC Address: 00:40:9D:26:B9:28

Obtain network settings automatically
 Manually configure network settings

IP Address: 192 . 168 . 57 . 125
Subnet Mask: 255 . 255 . 255 . 0
Default Gateway: 192 . 168 . 57 . 90

Save Cancel

Unless you want to change the Baud rate of the serial port because of other devices connected by RS-485 to your device, no additional configuration should be required.

Master reset

DHCP (automatic network settings) is the default setting following a master reset. In the right pane of Digi Device Discovery, select (highlight) with the mouse the device to be configured. In the left pane, select Open Web Interface under Device Tasks.

Digi Web Interface

Login

Initially, the web interface should open the login page:

Digi Connectware™

Digi Connect ME Configuration and Management

Login

Welcome to the Configuration and Management interface of the Digi Connect ME

Please specify the username and password to login to the web interface.

See the User Guide and documentation for more information on logging in or retrieving a lost password.

Username:

Password:

Copyright © 1996-2005 Digi International, Inc. All rights reserved.
www.digi.com

Depending on the situation, use the following Username and password:

	Factory Standard	After a Master Reset
Username	rotronic	root
Password	wlan	dbps

Doing a Master Reset

Warning

Use the master reset procedure only when absolutely necessary: on occasions, the Digi module has problems resetting. In addition, the user must reconfigure all module settings manually.

Procedure

The following procedure is written for a wireless docking station and can easily be adapted to other types of ROTRONIC wireless device.

- Remove the AC adapter (power) from the docking station
- Remove the HygroLog NT from the docking station
- Connect pins 7 and 8 of the docking station 15-pin connector
-



- Connect the AC adapter to the docking station
- The docking station yellow LED flashes after about 10 seconds
- Wait at least 2 minutes (during this time the yellow LED will flash several times)
- Remove the connection between pins 7 and 8 of the docking station 15-pin connector. Do not disconnect the AC adapter from the docking station.
- During the next 2 minutes, no LED should be flashing
- After about 2 minutes, the Digi module restarts automatically. The yellow LED comes up first (solid) and then the green LED starts flashing.

Default configuration after a master reset

After a master reset, the Digi module should default to the following configuration settings:

IP Settings

Note that the Digi module is set to DHCP (automatic configuration of the IP address, subnet mask and gateway IP address by the wireless router). At this time you should keep this setting.

Digi Connect ME Configuration and Management - Microsoft Internet Explorer

Adresse http://89.0.90.96/config/network/network_config.htm

Digi
Connectware™

Digi Connect ME Configuration and Management

Home

Configuration

- Network
- Serial Ports
- GPIO
- Alarms
- System
- Remote Management
- Users

Management

- Serial Ports
- Connections

Administration

- File Management
- Backup/Restore
- Update Firmware
- Factory Default Settings
- System Information
- Reboot

Logout

Network Configuration

IP Settings

Obtain an IP address automatically using DHCP *

Use the following IP address:

* IP Address:

* Subnet Mask:

Default Gateway:

* Changes to DHCP, IP address and Subnet Mask require a reboot to take effect.

▶ Network Services Settings

▶ Advanced Network Settings

Copyright © 1996-2005 Digi International, Inc. All rights reserved.
www.digi.com

Wireless LAN Settings

At this time you should keep these settings.

Digi Connect Wi-ME Configuration and Management - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Search Favorites

Address http://192.168.58.5/config/network/wireless_config.htm

Digi
Connectware™

Digi Connect Wi-ME Configuration and Management

Home

Configuration

- Network
- Serial Ports
- GPIO
- Alarms
- System
- Remote Management
- Users

Management

- Serial Ports
- Connections

Administration

- File Management
- Backup/Restore
- Update Firmware
- Factory Default Settings
- System Information
- Reboot

Logout

Network Configuration

- IP Settings
- Wireless LAN Settings**

Network name: (SSID)

Connect to any available wireless network

Connect to access point (infrastructure) networks only

Connect to peer-to-peer (ad-hoc) networks only

Country:

Channel:

Enable Short Preamble

- Wireless Security Settings
- Wireless 802.1x Authentication Settings
- Network Services Settings
- Advanced Network Settings

Copyright © 1996-2005 Digi International, Inc. All rights reserved.
www.digi.com

Serial Ports

Digi Connect ME Configuration and Management

Home

Configuration

- Network
- Serial Ports**
- GPIO
- Alarms
- System
- Remote Management
- Users

Management

- Serial Ports
- Connections

Administration

- File Management
- Backup/Restore
- Update Firmware
- Factory Default Settings
- System Information
- Reboot

Logout

Port	Description	Profile	Serial Configuration
Port 1	None	<Unassigned>	9600 8N1

Copyright © 1996-2005 Digi International, Inc. All rights reserved.
www.digi.com

IMPORTANT: the above settings are not compatible with the ROTRONIC wireless devices and should be changed as indicated under Serial Port Configuration after a Master Reset.

Serial Port Configuration after a Master Reset

In the left pane, select Configuration > Serial Ports. If for some reason no port profile was configured, the following page will open:

Select TCP Sockets.



Digi Connect ME Configuration and Management

? Help

Select Port Profile...

You have currently not assigned a profile to this serial port. Profiles allow you to easily configure serial ports by only displaying those items that are relevant to the current profile.

Select the profile below that best matches your configuration.

- RealPort**
The RealPort Profile allows you to map a COM or TTY port to the serial port. [More...](#)
- Console Management**
The Console Management Profile allows you to access a device's console port over a network connection. [More...](#)
- TCP Sockets**
The TCP Sockets Profile allows a serial device to communicate over a TCP network. [More...](#)
- UDP Sockets**
The UDP Sockets Profile allows a serial device to communicate using UDP. [More...](#)
- Serial Bridge**
The Serial Bridge Profile configures one side of a serial bridge. A bridge connects two serial devices over the network as if they were connected with a serial cable. [More...](#)
- Local Configuration**
The Local Configuration Profile allows you to connect standard terminals or terminal emulation programs to the serial port in order to use the serial port as a console to access the command line interface. [More...](#)
- Modem Emulation**
The Modem Emulation Profile allows you to configure the serial port to act as a modem. [More...](#)
- Custom**
The Custom Profile is an advanced option to allow full configuration of the serial port. [More...](#)

Apply Cancel

In the normal situation, the following page opens when clicking on Serial Ports in the left pane:

Digi Connect ME Configuration and Management

Connectware™

Home

Configuration

- Network
- Serial Ports**
- GPIO

Serial Port Configuration			
Port	Description	Profile	Serial Configuration
Port 1	None	<Unassigned>	9600 8N1

TCP Server Settings (TCP Sockets)

The screenshot shows the Digj Connect Wi-ME Configuration and Management web interface in Microsoft Internet Explorer. The address bar shows the URL: `http://192.168.58.5/config/ports/port_config_profile.htm?1`. The page title is "Connectware™".

The left sidebar contains a navigation menu with the following sections:

- Home**
- Configuration**
 - Network
 - Serial Ports**
 - GPIO
 - Alarms
 - System
 - Remote Management
 - Users
- Management**
 - Serial Ports
 - Connections
- Administration**
 - File Management
 - Backup/Restore
 - Update Firmware
 - Factory Default Settings
 - System Information
 - Reboot
- Logout

The main content area is titled "Serial Port Configuration" and is divided into several sections:

- Port Profile Settings**:
 - Current Port Profile: **TCP Sockets** [Change Profile...](#)
 - The TCP Sockets Profile allows a serial device to communicate over a TCP network.
- TCP Server Settings**:
 - Connect directly to the serial device using the following TCP ports on the network.
 - Enable Telnet access using TCP Port: Enable TCP Keep-Alive
 - Enable Raw TCP access using TCP Port: Enable TCP Keep-Alive
 - Enable Secure Socket access using TCP Port: Enable TCP Keep-Alive
- TCP Client Settings**:
 - Automatically establish bi-directional TCP connections between the serial device and a server or other networked device.
 - Automatically establish TCP connections
 - Establish connection under one of the following conditions:
 - Always connect and maintain connection
 - Connect when data is present on the serial line
 - Match string:
 - Strip string before sending
 - Connect when DCD (Data Carrier Detect) line goes high
 - Connect when DSR (Data Set Ready) line goes high
 - Establish connection to the following network service:
 - IP Address:
 - Service:
 - TCP Port:
 - Enable TCP Keep-Alive

- Configure the serial port exactly as shown above.

Basic Serial Settings

Move to the bottom of the page and click on Basic Serial Settings:

Establish connection to the following network service:

IP Address:

Service:

TCP Port:

Enable TCP Keep-Alive

▶ Basic Serial Settings

▶ Advanced Serial Settings

Copyright © 1996-2005 Digi International, Inc. All rights reserved.
www.digi.com

The following page opens:

Digi Connect Wi-ME Configuration and Management - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Home Search Favorites Refresh Print Mail Stop

Address http://192.168.58.5/config/ports/port_config.htm?1

Digi
Connectware™

Digi Connect Wi-ME Configuration and Management

Home

Configuration

- Network
- Serial Ports**
- GPIO
- Alarms
- System
- Remote Management
- Users

Management

- Serial Ports**
- Connections

Administration

- File Management
- Backup/Restore
- Update Firmware
- Factory Default Settings
- System Information
- Reboot

Logout

Serial Port Configuration

▶ Port Profile Settings

▼ **Basic Serial Settings**

Description:

Baud Rate:

Data Bits:

Parity:

Stop Bits:

Flow Control:

▶ Advanced Serial Settings

Copyright © 1996-2005 Digi International, Inc. All rights reserved.
www.digi.com

- Set Data Bits, Parity, Stop Bits and Flow Control as shown above.

- Depending on the type of ROTRONIC wireless device, set the Baud rate to either 57600 or 19200.

The following are the default Baud rate factory settings for the ROTRONIC wireless devices:

Docking Station (HygroLog NT)	57600
DI interface	57600
Other devices	19200

Advanced Serial Settings

Normally, this page is not used. The following screen-shot shows the default settings:

The screenshot shows the 'Advanced Serial Settings' page in a Microsoft Internet Explorer browser. The address bar shows the URL: `http://192.168.58.5/config/ports/port_advanced_config.htm?1`. The left sidebar contains navigation links for GPIO, Alarms, System, Remote Management, Users, Management (Serial Ports, Connections), and Administration (File Management, Backup/Restore, Update Firmware, Factory Default Settings, System Information, Reboot, Logout).

The main content area is titled 'Advanced Serial Settings' and contains the following settings:

- Serial Settings**
 - Enable Port Logging
 - Log Size:
 - Enable RTS Toggle
 - Pre-Delay: ms
 - Post-Delay: ms
 - Enable RCI over Serial (DSR)
- TCP Settings**
 - Send Socket ID
 - Socket ID:
 - Send data only under any of the following conditions:
 - Send when data is present on the serial line
 - Match string:
 - Strip match string before sending
 - Send after the following number of idle milliseconds
 - ms
 - Send after the following number of bytes
 - bytes
 - Close connection after the following number of idle seconds
 - Timeout: secs
 - Close connection when DCD goes low
 - Close connection when DSR goes low

Wireless Security

IMPORTANT: Wireless security should be enabled first on the ROTRONIC wireless device and last on the wireless router. Enabling wireless security in the reverse order will not work.

The following example shows how to use both a network name and WEP keys.

- In the Digi module web server home page select **Network** under Configuration and **Wireless LAN Settings** in the Network page. The following page opens:

The screenshot shows a Microsoft Internet Explorer browser window displaying the Digi Connect Wi-ME Configuration and Management web interface. The address bar shows the URL: http://192.168.58.5/config/network/wireless_config.htm. The page title is "Digi Connect Wi-ME Configuration and Management". The interface includes a navigation menu on the left with sections for Home, Configuration, Management, and Administration. The "Configuration" section is expanded, showing "Network" selected. The "Network Configuration" section is also expanded, showing "Wireless LAN Settings" selected. The "Wireless LAN Settings" page contains the following fields and options:

- Network name: (SSID)
- Radio buttons for connection mode:
 - Connect to any available wireless network
 - Connect to access point (infrastructure) networks only
 - Connect to peer-to-peer (ad-hoc) networks only
- Country: (dropdown menu)
- Channel: (dropdown menu)
- Enable Short Preamble
-

Enter your wireless network name (SSID) to point the wireless module to your network. At a later stage, the wireless router will be configured to use the same network name.

Select "Connect to access point (infrastructure) networks only".

At this time, **do not click on Apply** or you will lose communication with the wireless router.

- To use WEP keys, click on “Wireless Security Settings” (bottom of the page) to open the following page:

Digi Connect Wi-ME Configuration and Management - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address http://192.168.58.5/config/network/wireless_security_config.htm

Digi Connectware™

Digi Connect Wi-ME Configuration and Management

Home

Configuration

- Network
- Serial Ports
- GPIO
- Alarms
- System
- Remote Management
- Users

Management

- Serial Ports
- Connections

Administration

- File Management
- Backup/Restore
- Update Firmware
- Factory Default Settings
- System Information
- Reboot

Logout

Network Configuration

- IP Settings
- Wireless LAN Settings
- Wireless Security Settings**

Network Authentication

Use any available authentication method

Use the following selected method(s):

- Open System
- Shared Key
- WEP with 802.1x authentication
- WPA with pre-shared key (WPA-PSK)
- WPA with 802.1x authentication
- Cisco LEAP

Data Encryption

Use any available encryption method

Use the following selected method(s):

- Open System (no encryption)
- WEP
- TKIP
- CCMP

WEP Keys

Transmit key: 1 2 3 4

Encryption Keys:

1:	<input type="text" value="534F200B20"/>
2:	<input type="text" value="919E080881"/>
3:	<input type="text" value="1BEC8AADBC"/>
4:	<input type="text" value="DA916859D9"/>

Under Network Authentication, select “Use the following selected methods” and “Open Network”.

Under Data Encryption, select “Use the following selected method(s)” and WEP (assuming that your wireless network is set to use WEP. Under WEP keys, enter the value of each WEP key (for 64-bit encryption, each key has 20 hexadecimal characters). The WEP keys must be identical to those used by the wireless router. Note that the WEP keys should be specified as HEX values (0-F). ASCII characters are not accepted.

- Click on Apply and exit the module web server.
- Access your wireless router configuration and re-establish wireless security and the WEP keys.

Changing the Web Server User Name and Password

Click on Configuration – Users

The screenshot displays the web interface for Digi Connect Wi-ME Configuration and Management. The browser window title is "Digi Connect Wi-ME Configuration and Management - Microsoft Internet Explorer". The address bar shows the URL "http://192.168.58.5/config/users/user_info.htm". The page content includes the Digi Connectware logo and a navigation menu on the left with options like Home, Configuration, Network, Serial Ports, GPIO, Alarms, System, Remote Management, and Users. The main content area is titled "Users Configuration" and features a table with the following structure:

User Name	Action
rotronic	

Below the table, there is a "New..." button.

Click on the user name text box:

Digi Connect Wi-ME Configuration and Management - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Home Search Favorites Refresh Mail Print Mailbox Documents Chat People

Address http://192.168.58.5/config/users/user_config_edit.htm?1

msn Search Highlight Options Pop-ups Blocked (1) My MSN

Digi
Connectware™

Digi Connect Wi-ME Configuration and Management

Home

Configuration

- Network
- Serial Ports
- GPIO
- Alarms
- System
- Remote Management
- Users

Management

- Serial Ports
- Connections

Administration

- File Management
- Backup/Restore
- Update Firmware

User Configuration - rotonic

▼ User Configuration

User Name:

New Password:

Confirm Password:

Apply

▶ User Access

▶ User Permissions

Change the user name and password as desired. Click on Apply.

Changing the Baud Rate of the ROTRONIC Device

When a ROTRONIC Ethernet device ¹ is used as the master device in a RS-485 multi-drop network, it may be necessary to change the factory default baud rate because all devices in the RS-485 multi-drop must use the same baud rate.

¹ Examples: HygroLog NT docking station, HygroClip DI

Changing the baud rate of an Ethernet device is a two step process (to be followed in the indicated order):

(1) Change the baud rate in HW4 > Device Manager > Interface

(2) Change the baud rate using the Web Interface of the internal Digi International module: Configuration > Serial Port > Basic Serial Settings

Troubleshooting Tips

- Disable any firewall (including Windows Firewall)
- Disable any proxy server
- Verify that the subnet mask and the gateway IP address are both compatible with your LAN
- Verify that port 2101 is enabled and not blocked by the router
- Test the connection with the docking station with the Windows ping command: Start > All Programs > Accessories > Command Prompt (example ping 192.168.57.125)