Installation and Programming Manual

CE





1. Introduction

The UT-4 interface enables communication with various devices equipped with serial port trough a computer network. The device is equipped with serial port which can be configured as RS232, RS422 or RS485 and connected to a 100/10 BaseT Ethernet computer network. Interface is identified in a computer network by its IP address (assigned during installation process) and by factory pre-programmed MAC number. The main component of the interface is the **Digi Connect ME** network module manufactured by **Digi Corporation**. All, original Digi software tools dedicated to this module may be also directly management of the UT-4 interface. More information about **Digi Connect ME** can be found on: www.digi.com.

2. Limitations of using the interface

The Digi Connect ME module — the main part of the UT-4 interface — represents high level of advanced technology. In most cases it successfully replaces physical serial ports. However in some (rare) situations, using it may not guarantee a proper communication. In extreme situations, communication will not be possible at all. The problems are caused by time characteristics of network transmission in specific environments as well as by specific features of a serial communication protocol used by a serial device. Especially, problems may arise when communication is performed through VPNs. In this type of network large time delays during data transfer may exist. As a result proper data exchange between PC and remote serial device(s) may be interfered. In some cases the UT-4 can be reconfigured and successfully adopted for those specific communication circumstances, in other case not.

Note: To avoid potential problems, it is recommended to perform series of tests in specific installation environment before purchasing a device.

3. Data flow control in RS485

The control of data flow in RS485 interface is performed on a time basis. Normally, when UT-4 is not receiving any data from a host device (PC), the RS485 operates in *receiving mode* — in this state all data incoming from the RS485 serial interface is immediately converted to TCP data frames and forwarded to the PC. As soon as the first byte of data is sent from the PC to a serial port, the UT-4 immediately switches RS485 lines to the *transmission mode* – as a result all data coming from the PC is send over RS485. The RS485 lines remains in the *transmission mode* until the PC stops sending data to the serial port. Switch RS485 lines from transmission back to receiving mode occurs automatically after approximately 1.5 ms from the last bit transmitted by a PC. The flow control method described above is compatible with specification of RACS communication protocol, however when UT-4 is configured as

RS485 and is prepared for communication with other devices or systems this method might not be successful.

4. Using UT-4 in RACS

RACS software package has been specially adopted for operation with access network connected to PC remotely — through a computer network. There is a special option **Communication port timeout** which is available in *Network properties* window of PR Master program:

etwork properties: S0	
Network active	
Network equipped with CPR control panel	
Use RTS/CTS flow control	
Enable Armed/Disarmed mode control for PRxx1 series	
(This options apply only to PRxx1 series access controllers)	
Name:	
Main Network (Building 1)	
Communication port timeout:	
150 ms	
Communication port:	
	OK Cancel

This option makes possible to adopt the PR Master program to specific conditions of particular TCP-Serial connection. It is recommended to set the parameter to the highest value of time delay expected during communication between PC and remotely located access control system. However, it is important not to exaggerate in setting this value too high, because in some situations it may cause unnecessary communication slowdown. In practice, it is assumed that **Communication port timeout** set for the remote access network connected through UT-4 should be defined as a value two times higher than the average time of TCP packet round-trip. You can estimate the round-trip time by entering PING [IP Address] – in the CMD console (available with the following menu sequence Start/Open/Run/cmd)



It works by sending ICMP echo request packets to the target UT-4 interface and listening for replies (ICMP echo response packets). Ping additionally provides estimates of the round-trip time and packet loss rate between host and UT-4. Tests should be carried out for at least 1 minute when the network traffic is especially high. In case the round-trip time exceeds 200-300ms, it is very likely that problems with communication between remote access control system and PC computer will occur. You should contact your network administrator regarding this issue and ask for some action to reduce delays in computer network.

Note: It is strongly recommended not to use a UT-4 interface for management of PRxx1 access controllers (e.g. PR401, PR301, PR201 and PR311). When during transmission of settings to those types of controllers the communication is broken, the only way to restore controller's operation is to perform *Memory Reset*. The *Memory Reset* requires intervention inside device's casing which might be very inconvenient when access controller is installed in remote locations (another building or even another city). This threat does not apply to PRxx2 series access controllers. Those devices employs *transactional method for transmission* of settings. Such a method guarantees that in case of transmission failure controller will automatically restore its previous configuration settings and operator will have next chance to repeat transmission to a controller without visiting remote location where it is installed.

5. Purpose of this document

This document describes installation process and configuration of the UT-4 interface for a *Virtual Serial Port*. This document is not intended to describe all possible configurations of Digi Connect ME network module in details. In case when UT-4 have to be used in other configuration you must refer to full documentation of Digi Connect ME module available on manufacturer's web site or to documentation and software delivered with the device.

Note: Because the Digi Connect ME network module is constantly improved and enhanced, it is highly recommended to download the most up to date version of firmware and documentation directly from Digi Corp. web site.

6. Installation

Installation process consists of electrical connection and software installation on the PC. Connection method for different communication standards has been presented in pictures attached to this manual. Below, you will find a list of installation steps which guide you trough configuration of UT-4 as a *Virtual Serial Port* in local area network (LAN) and wide area network (WAN) in various operating systems. The DIGI CONNECT software package consists of the following programs:

- Digi Device Discovery a tool for locating Digi Devices in a network;
- *Digi Device Setup Wizard* a wizard-style software utility for configuring Digi devices.
- Digi Port Authority— a management tool for monitoring network and serial activity from Windows clients.
- Digi RealPort Setup Wizard a wizard-style utility for configuring devices equipped with Digi's RealPort technology.
- *Digi Win9xME Driver* a RealPort driver for Windows 9x and ME operating systems.

Note, that beyond this program listed above, the Digi Connect ME features a web server technology therefore it may be accessed and reconfigured using any web browser.

7. Installation in LAN (MS Windows XP and 2K)

Installation is carried out by **Digi Device Setup Wizard**.

- 1. Before installation, make sure that:
 - The interface is connected and powered up.
 - You know the MAC address of the UT-4 being installed. This number is written on the white label placed on the Digi Connect ME module (to see this label you must remove a plastic cover of UT-4). The MAC number helps to identify the UT-4 in case you have more than one UT-4 assigned to the same IP address. The brand new UT-4s have the same factoryconfigured IP address, so to identify the device, the MAC address might be necessary.
 - The firewall does not block ADDP (*Advanced Digi Discovery Protocol*) traffic used by Digi Device Discovery for detection Digi devices. If the ADDP traffic (which uses port 2365 and a multicast ip address of 224.0.5.128) is blocked, the Digi Device Setup Wizard will be unable to detect the device in your local network.
- 2. Start Digi Device Setup Wizard.



- 3. Click **Next >** to continue.
- 4. The following dialog box containing a list of UT-4 interfaces will appear:

🕿 Digi Device Setup Wizard	$\overline{\mathbf{X}}$
Dia	Discover Device Locate your Digi device on the network.
	From the list below, select the device you would like to configure. Identify your device based on the MAC Address. If your device is not in the list, select <device listed="" not=""> and click Next. Found Devices:</device>
Configure Device	IP Address A MAC Address Product Name Firmware Version
Comigure Device	2192.168.0.14 00:40:9D:27:24:10 Digi Connect ME Version 82000856_F1
Save Settings	22192.168.0.16 00:40:9D:27:24:90 Digi Connect ME Version 82000856_F1
	Connect ME Version 82000856_F1 Connect ME Version 82000856_F1
	Refresh
	< Westecz Dalej > Skip >> Anuluj Pomoc

- Select device which you want to configure. To identify your interface you may use MAC address. Click **Refresh** to repeat detection procedure. In the list you can find information about IP, MAC address, device name and firmware version.
- 6. Click **Next >** to continue. The following dialog box appears:

🕿 Digi Device Setup Wizard		
Diq	Configure Network Settings Enter the following settings to configure the Digi Connect ME for your network.	I)
	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.	
Discover Device		
Configure Device	O Obtain IP settings automatically using DHCP	
Save Settings	Use the following II'settings	
	IP Address: 192.168.0.16	
	Subnet Mask: 255 . 255 . 255 . 0	
	Default Gateway:	
	DNS Server:	
	Domain:	
	Host Name:	
	To continue, click Next.	
	< Wstecz Dalej > Skip >> Anuluj	Pomoc

- 7. To configure network settings, make selections on this page:
 - Obtain IP Address settings automatically using DHCP this option requires a DHCP server to assign network settings. The UT-4 is shipped with the DHCP client feature enabled, so, if there is DHCP server in your network, select this option and your UT-4 will request network settings from a server.
 - **Use the following IP settings.** The second option requires that you gather network setting information from your network administrator and then enter it on this wizard page. The IP address and subnet mask are required, other fields are optional.
- 8. Click **Next >** to continue. The following dialog box will appear:

🕿 Digi Device Setup Wizard		
Digi	Select Scenario Browse through the list of scenarios and select the one that best describes how you will use your Digi device.	I)
	Scenario List:	
	RealPort (COM Port Redirection)	~
Discover Device	Scenario: RealPort (COM Port Redirection)	
Configure Device	Data	
Save Settings	Serial device Digi	
	Description:	
	Select this scenario if your application requires a COM or TTY port to communicate with your serial device. More	
	Application:	
	Printing, faxing, dial-up networking or other legacy applications which require access to a standard COM or TTY device.	
	1	~
	To continue, click Next.	
	<wl> < Wstecz Qalej > Skip >> Anuluj Port </wl>	10C

- 9. Select RealPort (COM Port Redirection) option from Scenario List drop down box. With the RealPort technology you will obtain a new Virtual Communication Port (new COM port) in you computer. This new COM port can be used by various applications as it was a real serial port like COM1. All data send/receive to/from this virtual COM port will be in fact redirected to UT-4 Digi module.
- 10. Click **Next >** to continue. The following dialog box will appear:

🕿 Digi Device Setup Wizar	rd	
Digi	Configure RealPort Settings Install RealPort on this computer.	I)
 Discover Device Configure Device 	RealPort software can be installed on one or more host servers to provide local serial port functionality.	
Save Settings	Install Digi RealPort on this computer	
	To continue, click Next.	
	< Westecz Dalej > Skip >> Anuluj	Pomoc

- 11. Select **Install Digi RealPort on this computer** checkbox and click **Next>** to proceed to the next step.
- 12. Verify the device and port configurations. If you are satisfied with the configurations, click **Next >** to apply them to the device. Otherwise, if you would like to change any of the settings, click **< Back**.



- 13. In order to save configuration report click the proper link on the dialog box.
- 14. To transfer configuration settings to the device, click Next >.

🕿 Digi Device Setup Wizard	1	X
Dia	Save Settings The configuration is being saved to your Digi Connect ME.	I)
	Saving the configuration may take a while. During this time your Digi Connect ME will be rebooted to apply the new settings. Do not cancel this operation.	
Discover Device		
Configure Device		
Save Settings		
	Digi Connect ME: Saving device settings	
	Plazes white the configuration is saved to the device	
	Trease wait write the contriguiation is saved to the device.	
	< Westecz Dalej > Skip >> Anuluj	Pomoc

15. This operation may take a while, so wait patiently and do not cancel this. After the installation is complete, the following window will appear:

🕿 Digi Device Setup Wizard	d	X
Dia	Congratulations! You have successfully completed the Digi Device Setup Wizard.	Ð
 Discover Device Configure Device Save Settings 	Saved configuration successfully. You can use the web interface to manage and monitor the Digi Connect ME. To access the web interface, check the "Log on to web interface" checkbox below and click Finish, or go to http://192.168.0.14. Additional information such as cabling and configuration information as well as troubleshooting tips may be found in the User's Guide.	
	Next steps: Register my Digi Connect ME on the Digi website Log on to web user interface of device Log on to command line interface of device Configure another device To close this wizard, click Finish.	
	< Wstecz Zakończ Skip >> Anuluj Pomoc	

16. Configuration has been successfully transmitted to the device. Click **Finish** to close this wizard.

After the installation, the new serial port will appear in Device Manager. This port can be used in the same manner as it was a real one.

8. Installation in WAN (MS Windows XP and 2K)

An installation in WAN consists of the following two stages:

- **IP configuration**. The purpose of this step is to assign IP settings to the device (performed in the local network or through a cross-cable).
- Virtual serial ports configuration. Performed in remote computers, which will access the device through WAN.

8.1. IP configuration

To configure the interface for WAN you have to set appropriate IP address, subnet mask and default gateway. In order to assign IP settings to the device you have to establish connection between the PC, and the device. Both should operate in the same subnet over LAN or use direct connection through the UTP cross cable. Operation of assigning of IP settings is carried out from **Digi Device Discovery** application.

- 1. Install Digi Device Discovery
- 2. Before installation, check the following issues:
 - Interface is connected and powered up.
 - You know the MAC address of the UT-4 being installed. This number is written on the white label placed on a Digi Connect ME module (to see this label you must remove a plastic cover of UT-4). The MAC number helps to identify the UT-4 in case you have more than one UT-4 assigned to the same IP address. The brand new UT-4s with factory settings have the same IP address so the MAC address might be necessary.
 - Make sure that the firewall does not block ADDP (Advanced Digi Discovery Protocol) traffic used by Digi Device Discovery for detection Digi devices. If the ADDP traffic (which uses port 2365 and a mulicast ip address of 224.0.5.128) is blocked, the Digi Device Setup Wizard will be unable to detect the device in your local area network.
- Click Start -> All Programs -> Digi -> Digi Device Discovery -> Digi Device Discovery, the following window will appear:



Application detects available UT-4 devices using broadcast method and displays in the window. To refresh a list of detected devices, click *Refresh*.

If your device:

- Is listed in black, the wizard fully supports it.
- Is listed in gray, the IP address, subnet mask, and default gateway can be configured, but the wizard does not support configuration of other parameters.
- Is listed in red with a label that says **unconfigured**, the DHCP client feature is on (the default) and there is no DHCP server in the network.
- Is listed in red with a label that says Not properly configured (misconfigured) (like in the screenshot above), the device has been configured before and the IP address settings do not work on the subnet the device is connected to.
- 4. Select listed device and click **Configure network settings**, the following dialog box will appear:

Configure Network Se	ettings	\mathbf{X}
The network settings can supports this capability. O administrator for the appro	be assigned automatically if your network therwise, you need to ask your network opriate network settings.	
Device:	Digi Connect ME	
MAC Address:	00:40:9D:27:1C:57	
🔘 Obtain network sett	ings automatically	
 Manually configure 	network settings	ר
IP Address:	192.168.0.210	
Subnet Mask:	255 . 255 . 255 . 0	
Default Gateway:	192.168.0.222	
Sa	ave Cancel	

- Click Manually configure network settings option and enter IP Address, Subnet Mask and Default Gateway. If you not sure what values should be entered, ask your network administrator.
- 6. Click **Save**. Program will start sending configuration. Please wait while the device is restarting.

Please wait while the device is restarting
Cancel

8.2. Virtual Server Port configuration

Once the IP Address is assigned, you should install VSP (Virtual Serial Port) on a PC connected to WAN. Installation is carried out with **Digi RealPort Setup Wizard**.

1. Click **Setup.exe** to run wizard, the following window will appear:

🐲 Digi RealPort Setup Wiz	zard
	Welcome to the Digi RealPort Setup Wizard
D igi	This wizard will help you to manage Digi RealPort on your system.
	Digi's patented RealPort® software enables your application to access your serial device over the network as if it is connected to a local COM port.
	Please select an option:
	Add a New Device
	C Remove an Existing Device
	C Update Digi RealPort Software
	To continue, click Next.
	< Wstecz Dalej > Anuluj

 If you do not have any devices installed, choose Add a New Device and then click Next >.

Digi RealPort Se	etup Wizar	rd			
Select Device From the list be the list, select <	low, select the Device not list	e device you w sted> and click	ould like to use. Next.	If your device	is not in
D · · · · ·					
Devices found on y	our network:	MAC Address		Model	
Device not list	ted>	_ MAC Address		Model	I
No devices were de behind a firewall. P	etected. Your lease see the	device may not Release Notes	: be on-line or it	may be	Refresh
				ation.	
The Setup Wizard	I searches o	nly local netw to WAN netwo	< Wstecz vorks for UT-4 ork click < De	Dalej > devices. To i vice not liste	Anuluj nstall ed> and
The Setup Wizarc interface which is then click Next > Digi RealPort Se	I searches o connected ► to continue etup Wizar	nly local netw to WAN netwo e. The followir r d	< Wstecz vorks for UT-4 ork click <de< b=""> ng window wil</de<>	devices. To i vice not liste l appear:	Anuluj nstall ed> and
The Setup Wizard interface which is then click Next > Digi RealPort Se Describe the De Enter informatio	I searches o connected ▶ to continue etup Wizar vice m for the devi	nly local netw to WAN netwo e. The followir r d ice you would li	< Wstecz vorks for UT-4 ork click < De ng window wil ke to use.	devices. To i vice not liste l appear:	Anuluj nstall ed> and
The Setup Wizarc interface which is then click Next > Digi RealPort Se Describe the De Enter informatic	I searches o connected to continue etup Wizar vice m for the devi	nly local netw to WAN netwo a. The followin rd ice you would li	< Wstecz vorks for UT-4 ork click <de< b=""> ng window wil ke to use.</de<>	devices. To i vice not liste l appear:	Anuluj nstall ed> and
The Setup Wizard interface which is then click Next > Digi RealPort Se Describe the De Enter information Model Name: Serial Porte:	I searches o connected to continue etup Wizar vice on for the devi RealPort	nly local netw to WAN netwo a. The followin rd ice you would li Device (WAN	< Wstecz vorks for UT-4 ork click <de< b="">ving window will ke to use.</de<>	devices. To i vice not liste l appear:	Anuluj nstall ad> and
The Setup Wizard interface which is then click Next > Digi RealPort Se Describe the De Enter information Model Name: Serial Ports:	I searches o connected to continue etup Wizar vice on for the devi RealPort 1	Inly local networks of the following of	< Wstecz vorks for UT-4 ork click <de< b="">ving window will ke to use.</de<>	devices. To i vice not liste l appear:	Anuluj nstall ed> and
The Setup Wizard interface which is then click Next > Digi RealPort Se Describe the De Enter information Model Name: Serial Ports: IP Address:	I searches o connected to continue etup Wizar vice on for the devi	Inly local network to WAN network a. The following rd ice you would list Device (WAN 1000000000000000000000000000000000000	< Wstecz vorks for UT-4 ork click < De ving window will ke to use.	devices. To i vice not liste l appear:	Anuluj nstall ed> and
The Setup Wizarc interface which is then click Next > Digi RealPort Se Describe the De Enter information Model Name: Serial Ports: IP Address: IP Address:	d searches o connected to continue etup Wizar vice on for the devi	only local netw to WAN netwo e. The followin rd ice you would li : Device (WAN	<wstecz vorks for UT-4 ork click <de< b="">ving window will ke to use.</de<></wstecz 	devices. To i vice not liste l appear:	Anuluj nstall ed > and
The Setup Wizarc interface which is then click Next > Digi RealPort Se Describe the De Enter information Model Name: Serial Ports: IP Address: IP Address: IP Address: IP Or MAC Addr.	d searches o connected to continue etup Wizar vice on for the devi	nly local netw to WAN netwo e. The followin rd ice you would li Device (WAN	<wstecz vorks for UT-4 ork click <de< b="">ving window will ke to use.</de<></wstecz 	devices. To i vice not liste l appear:	Anuluj nstall ad> and
The Setup Wizarc interface which is then click Next > Digi RealPort Se Describe the De Enter information Model Name: Serial Ports: IP Address: IP Address: IP Address: IP Or MAC Addr. Device TCP Port:	d searches o connected to continue etup Wizar vice on for the devi RealPort	nly local netw to WAN netwo e. The followin rd ice you would li : Device (WAN \$ 51 . 254 . 42	<wstecz vorks for UT-4 ork click <de< b="">ving window will ke to use.</de<></wstecz 	devices. To i vice not liste l appear:	Anuluj nstall ed> and
The Setup Wizarc interface which is then click Next > Digi RealPort Se Describe the De Enter informatic Model Name: Serial Ports: IP Address: IP Address: IP Address: IP Or MAC Addr. Or Hostname: Device TCP Port: Configure for (d searches o connected to continue etup Wizar vice on for the devi RealPort 1 80 80 5 771 Cellular Netwo	nly local netw to WAN netwo e. The followin rd ice you would li : Device (WAN \$ 51 . 254 . 42 \$ 1 . 254 . 42	<wstecz vorks for UT-4 ork click <de< b="">ving window will ke to use.</de<></wstecz 	devices. To i vice not liste l appear:	Anuluj nstall ed> and

 Enter information for the device you would like to install. First, enter the Model Name. You may optionally leave this set to its default value -, "Standard RealPort Device". Below, enter the number of physical serial ports on the interface you are installing, (select 1). Enter IP address and TCP port (default is 771). Consult your system administrator if you do not know or are not sure

what the address or the port number is. Click **Next** > to continue. The

following window will appear

🥗 Digi RealPort Setup Wizard		
Select COM Names Select a starting COM port numbe list below. Click Next to begin the	r for your new ports. Verify the new names in the installation.	I)
Start: COM10 💌		
New names:		
FORT . COMIN		
		1
	< Wstecz Dalej >	Anuluj

5. The Setup Wizard automatically chooses the first available Windows COM port and maps it to the physical port on the UT-4. If you would like to choose a different COM port, pick one from the drop-down list. Once you have selected a COM names, choose **Next** > to complete installation. The following window will appear:



6. This page shows the progress of the UT-4 installation process. Once the device is installed the following window will appear:

💀 Digi RealPort Setup Wizard 🛛 🛛 🔀		
	Congratulations!	
Digi	You have successfully completed the Digi RealPort Setup Wizard. Your device is installed and ready to use.	
	To close this wizard, click Finish.	
	< Wstecz Zakończ Anuluj	

 This page concludes device installation and should indicate successful installation of UT-4 device. Click **Finish** to exit the wizard. 8. After installation is complete, you have to adjust network settings to the type of your network connection. To enter this options run **Device Manager** from **Control Panel**.



 Expand Multi-Port Serial Adapters, right-click installed port and choose Properties. In the dialog box which will be displayed click Advanced tab:

Właściwości: RealPort Device (WAN network) (80.51.254.42) 🛛 👔 🔀		
Ogólne Advance	d Sterownik Szczegóły	
RealPort	t Device (WAN network) (80.51.254.42)	
Digi Rea	alPort for Windows	
Copyrigh	t 1998-2005 Digi International Inc.	
Protecte	d by U.S. Patent No. 6,047,319. Patents Pending.	
Device Informat	ion	
Model Name:	RealPort Device (WAN network)	
No. of Ports:	1	
IP Address:	80.51.254.42	
TCP Port:	771	
Status:	Reconnecting	
Device UI:	http://80.51.254.42	
	Properties	

10. Click **Properties...**. The following dialog box will appear:

RealPort Device (WAN network)	(80.51.254.42) Advanced Properties
RealPort Device (WAN network)	Properties Serial Advanced Network Pott Pott 1 (COM10) Pott Network Profile This setting controls how the driver and device communicate serial data and events, which has an impact on the number of bytes transmitted across a network. It also affects application performance and serial data throughput and latency. Set most ports according to the device connection- use Wired for devices that connect on a LAN, or wired Ethernet network; use Wireless/WAN for devices on busier or more latent networks; and use Cellular for devices on cellular networks. Network
<	Help
OK Cancel Apply	

- 11. Select **Port (COM X)** from the list on the left side, where X is a number of installed Virtual Serial Port.
- 12. Click **Network tab** to open **Port Network Profile** settings. This option controls how the driver and device communicate with serial data. This setting has an impact on the number of bytes transmitted across a network as well as on application performance, serial data throughput and latency. Select one of the three pre-determined network profiles:
 - Wired/LAN,
 - Wireless/WAN,

- Cellular/Satellite,
- Custom... (create your own profile)

Each of these settings configures the port to better utilize network resources based on the type of network being used. **Wireless/WAN** option should be selected for devices connected to networks of high traffic with long delays. In order to specify advanced settings click **Adjust**. The following window will appear:

Adjust Port Network Profile	? 🔀	
Warning: Please review the help documentation or contact your system administrator before altering these values.		
Port Network Profile: C Wired/LAN (* Wireless/WAN C C	Cellular/Satellite C Custom	
Device Receive Data Triggers	Device Transmit Notification Triggers	
These triggers control when the device delivers incoming data to the driver.	These triggers control when the device notifies the driver that outgoing data has been sent.	
Hold data until this many bytes are received:	Notify driver after sending 512 ÷	
Driver Receive Natification Triager	Or this many msec pass 100 📫	
This trians sector when the drive set first the device that it	Complete Write Requests Immed. (WriteFile)	
has consumed incoming data.	Signal TXE Immediately (WaitCommEvent)	
Notify device after receiving this many bytes: 512 📫	Ignore changes in flow control lines	
Helo Default	OK Cancel	
Kanala Andrea		

Note: It is highly recommended not to change predefined values in network profiles. In case it is necessary, please read Digi documentation first or consult changes with your network administrator.

13. Click **OK** and **Apply** to finish UT-4 installation. Communication interface is now ready to operate in RACS system.

9. Installation in MS Windows 9X/ME

- 1. Open Start -> Settings -> Control Panel.
- 2. Locate and run the Add New Hardware applet.
- Click Next > and in the next screen click Next > again. The following dialog box will display.

Kreator dodawania nowego sprzętu



Click No, the device isn't in the list. Choose Next > to continue. (This dialog box does not appear in Windows Me).

Kreator dodawania nowego sprzętu		
	Wybierz typ sprzętu, który chcesz instalować.	
	Typy sprzętu:	
\sim	Akceleratory 3D	4
	🍯 Drukarka	
	Gniazdo PCMCIA	
	Kartu graficzne	
	B Karty sieciowe	
	Karty wielofunkcyjne	
	🎕 Klawiatura	
	🐼 Kontroler magistrali 1394	_
	< <u>₩</u> stecz Dalej> A	nuluj

 Windows displays a list of hardware categories. Select **Other devices** and choose **Next >** to continue.

Kreator dodawania nowego	sprzętu	
Wybierz nazwę producenta i model sprzętu. Jeśli nazwy nie ma na liście lub jeśli masz dysk instalacyjny, kliknij przycisk Z dysku.Jeżeli sprzętu nie ma na liście, kliknij przycisk Wstecz, a następnie wybierz sprzęt innego typu.		
<u>P</u> roducenci:	Modele:	
(Generic USB Audio) (Klawiatury standardowe) (Ogólny koncentrator USB) (Port COM podczerwieni) (rozpoznane sterowniki siec (Standard 1394 controllers)	Urządzenie audio USB	
	dysku	
	< <u>W</u> stecz Dalej> Anuluj	

6. Windows will display a list of known hardware in the category previously selected. Do not select any device from the list. Instead, choose **Have Disk...** to point Windows to the location of the installation files.

Otwórz		? ×
Nazwa pliku: digirp.inf digirpp.inf digirpp.inf	Eoldery: C:\WIN\DIGI_driver_win98	OK Anuluj Si <u>e</u> ć
	Dyski:	

 Enter the path to the Digi driver files and click **OK** (The latest version of software, drivers and firmware can be downloaded from: <u>www.digi.com</u>).

Kreator doda w ania nowego sprzętu
Wybierz nazwę producenta i model sprzętu. Jeśli nazwy nie ma na liście lub jeśli masz dysk instalacyjny, kliknij przycisk Z dysku.Jeżeli sprzętu nie ma na liście, kliknij przycisk Wstecz, a następnie wybierz sprzęt innego typu.
Digi Connect EM Digi Connect ME Digi Connect SP Digi Connect Wi-EM Digi Connect Wi-ME Digi EtherLite 16 Digi EtherLite 160
<u>Z</u> dysku < <u>W</u> stecz Dalej > Anuluj

8. Windows now searches the indicated directory for installation files and

displays a list of devices it can install. Select **Digi Connect ME** from the list, and choose **Next >**. The following window will appear:

Kreator dodawania nowego sprzętu		
	System Windows może już kontynuować instalację sprzętu. Aby kontynuować instalację oprogramowania wymaganego przez sprzęt, kliknij przycisk Zakończ.	
	< <u>W</u> stecz Zakończ Anuluj	

9. Choose ${\bf Finish}$ to continue the installation. The following window will appear:

Add New Digi Hardware	×
Please enter the device's I.P. address and TCP port. These values are needed by the driver to locate your	ОК
device. You may change this information later using the Device Manager.	Cancel
Device Properties	
I.P. Address: 192 168 0 202	
ICP Port: 771 (Default: 771)	Digit

- 10. Enter IP Address and TCP port.
- 11. Click **OK** to finish the installation.

After this step of the installation a new serial port in Windows Device Manager will appear. It can be used in the same manner as it was the real one.

10. Reconfiguration

Current Digi module settings can be changed whenever required. You can do it either using dedicated software or directly from your internet browser. To access UT-4 from web browser enter its IP address (defined during configuration) in Address field, and log in. When the internet browser connects with Digi module it will ask you for username and password. These are the factory-default values:

Username: **root** Password: **dbps**

Note: It is strongly recommended to change the default username and password. This is very important for security reasons. Failing to do so may open a way to a malicious user knowing the factory settings, to destroy the device's settings and even to attack a whole network.

Reconfiguration of a Digi device requires professional knowledge of network technology and a Digi module. The information presented in this manual are not intended for detailed setup of a Digi network module.

11. Uninstallation

To remove virtual serial port from the system follow the following procedure:

- 1. Click Start -> Control Panel -> System.
- 2. Select Hardware tab -> click Device Manager.



- 3. Expand Multi-Port Serial Adapters.
- 4. Right-click port which you want to remove (**Standard Realport Device**) and select **Uninstall**.

Note: VSP ports can be found also in **LPT and COM ports** category. Remember: do not remove them from there. They will be automatically removed after uninstallation of Multi-Port Serial Adapters.

12. Known problems

Here are few examples of known conflicts (when device is not listed, the wizard could not locate the interface or displays it as "misconfigured"):

 Trouble discovering a device using Windows XP with Service Pack 2. You will need to make sure that the Windows Firewall is disabled. By default it is enabled and will block the port that the discovery software uses to discover Digi.

To disable the firewall go to **Start->Settings->Control Panel->Windows Firewall**. Then click the **Off** button to disable it.

- 2. Trouble discovering a device due to a router or other network hardware between your PC and the target device. This situation may happen when the network hardware does not allow multicast traffic.
- **3.** Trouble discovering a device through VPN or dial up connection. Problems in such configurations may be caused by lack of support of multicast traffic.
- 4. Digi Device Discovery Tool Shows Unit as "Misconfigured".

The Digi Device Discovery Tool will figure out what it believes to be your Network Adapters IP Address and Submask, and if a Digi Unit on the network reports back with an IP address that doesn't seem to line up it will report the Unit as "misconfigured". For Example: the IP Address and Submask the PC is using is 10.4.110.1 and 255.255.255.0. When the Digi Device Discovery Tool sees the unit with a 192.168.1.12 IP address it will recognize the fact you can not communicate to it (as it is on a different network segment) and report back to you it is "misconfigured". Please note that the utility will not report back "misconfigured" if, for instance, the serial ports on the device are not setup correctly in how you intend to use them. 'Misconfigured" only applies to the IP settings of the unit.

5. Missing all COM ports in Windows 2000

Make sure that the system has at least one of it's native serial ports enabled in the system BIOS. Failure to do this will prevent the Microsoft Serial Driver from loading. The Digi makes use of it and will not be able to load without it, hence the missing com ports.

If the native serial port (usually Com 1) is having trouble loading then try changing the IRQ and/or the memory address. It is possible that there is a conflict with another device.

If using a laptop with a docking station, make sure it is firmly connected. A bad connection could prevent the com port from loading in windows 2000. If using a desktop, the problem could be caused by a bad Ethernet connection. Try powering the system off, reseat the network card, and reboot. If the problem persists try changing, if possible, the assigned IRQ in the system BIOS. This may not be possible if the BIOS doesn't support it however.

More information about possible problems can be found in the Knowledge base available on Digi web site (<u>www.digi.com</u>).

Technical Specification	
Power supply :	10.0 15V DC
Supply current :	average 75mA, max. 150mA
Serial interface	RS232, lines: RXD, TXD, RTS, CTS, GND RS422, lines: TXA, TXB, RXA, RXB RS485, lines: A and B
Ethernet standard	100/10 Base-T Ethernet
Operating temperature:	055°C
Relative humidity :	1090%
Dimensions (W x L x H) :	100 X 68 X 35
Weight :	Approx. 110g

Contact information: Roger sp. j. 82-416 Gościszewo Gościszewo 59 Phone: 055 272 0132 Fax: 055 272 0133 e-mail: biuro@roger.pl



Note: The flow control (switching of the RS485 interface between transmitting and receiving) is provided by a time method. Normally, the lines A and B are configured for receiving mode, as a result all data which comes from RS485 lines is immediately retransmitted through TCP to the host device (PC). With the first byte of data send by host to a virtual serial COM port, the RS485 lines are automatically switched to transmitting mode and remain in this state as long as the host continues sending data. The RS485 lines switch automatically into receiving mode after 1.5ms from the moment when last bit of data was send by host unit



Configuration and wiring of the UT-4 v2.0 Digi

cdr183