

AN-018-WUK

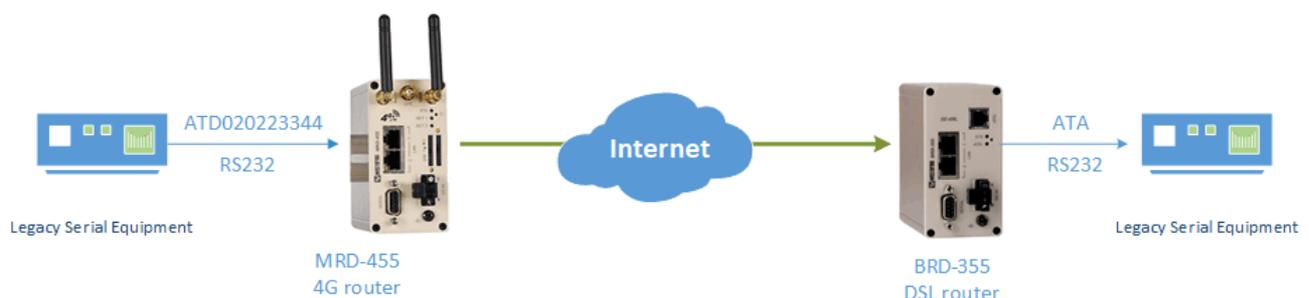
Replacing PSTN or Leased Line Modems with MRD/BRD 4G & Broadband Routers

For organisations that have legacy equipment that would normally require the use of a modem for communications.

With less support for leased lines and PSTN lines being available, Westermo has developed a range of cellular and wired broadband routers that can emulate a modem and send serial data securely over the internet.

Upgrading to Westermo routers now also ensures that organisations are prepared for when the legacy devices are upgraded to IP ready.

This application note shows the most common methods for achieving this.



Modem Emulation Mode

This method is used when the serial device is sending the dial and answer commands

Modem The modem will generate an AT command interface at the serial port. A device attached to the port can use standard AT commands to dial and receive calls.

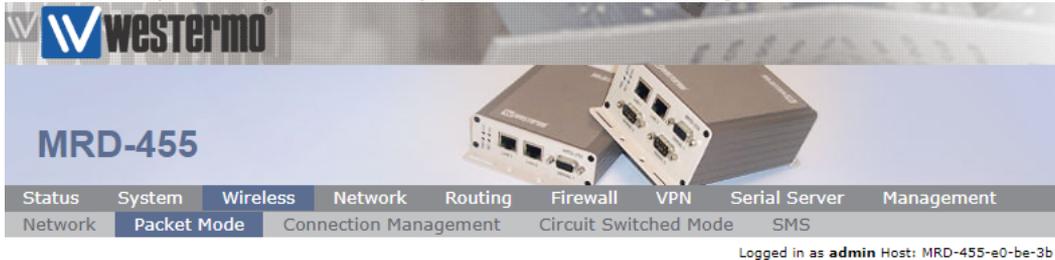
But instead of making a call over a PSTN or Leased line, the router will create a TCP connection over the xDSL/4G network to a remote IP address and port.

Example MRD-455 to BRD-355

Setting up the 4G Connection

Browse to **Wireless > Packet Mode**.

If there isn't already a 4G profile setup, click the **Add new profile** button.



Packet Mode

Connection Configuration						
Connection Mode						Always connect ▼
SIM 1 profile (active)						---- ▼
SIM 2 profile						---- ▼
Reset					Update	

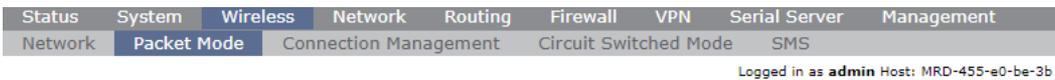
Index	APN	Auth	User	Password	Edit	Delete
No profiles configured.						
Add new profile						

APN: enter the APN given by your mobile provider for your SIM card.
Click **Update**.



Packet Mode

Add new profile	
APN	your APN goes here
Authentication	None ▼
Username	
Password	Not set New: <input type="checkbox"/>
Cancel	Update



Packet Mode

Connection Configuration						
Connection Mode						Always connect ▼
SIM 1 profile (active)						1 ▼
SIM 2 profile						1 ▼
Reset					Update	

Index	APN	Auth	User	Password	Edit	Delete
1	internet	None		Not set		
Add new profile						

Setting up the DSL Connection

As the BRD-355 is terminating the call/connection, the broadband router will require fixed broadband IP address.

NB: If the router's are connected to the Westermo WeConnect cloud network then fixed public IP addresses are not required.

Browse to **DSL > VDSL** (or **ADSL** according to the type of broadband you have).



VDSL Configuration

Connection Configuration						
Connection Mode			Disabled ▾			
Selected Profile			---- ▾			
Reset			Update			
Index	Type	Auth	User / Address	Gateway	Edit	Delete
No profiles configured.						
Add new profile						

Username: Enter your broadband username.
Password: Enter your broadband password.
 Click **Update**.

VDSL Configuration

Editing profile 1	
VDSL Configuration Settings	
VLAN Enabled	<input checked="" type="checkbox"/>
VLAN ID	101
Connection Settings	
Connection Type	PPPoE ▾
Authentication	Auto ▾
Username	your broadband username goes here
Password	Set New: <input checked="" type="checkbox"/> your broadband password
Service	BT
MTU	1492
Cancel	Update

ATD DIAL STRING TO FIXED DESTINATION

This method is used when the legacy serial devices are expecting to be sending dial strings and answering strings to modems that would be connected to their serial ports.

An AT command interface will be generated at the serial port. The legacy serial equipment making the call will send an ATD dial string as if it was connected to a modem. But instead of making a dial up connection over a PSTN line, the MRD-455 will create a transparent TCP data pipe to a fixed destination IP address to a BRD-355 DSL router.

When the TCP connection has been established, the BRD-355 will send a series of ‘RING’ alerts out of it’s serial port until the legacy equipment sends an ATA command to pick up the ‘call’. Once the ‘call’ has been answered, serial data can be sent transparently between the two legacy devices over an TCP/IP connection as if it was over a PSTN line.

This MRD-455 Modem Emulation Configuration

Browse to Serial **Server** > **Port Setup**.

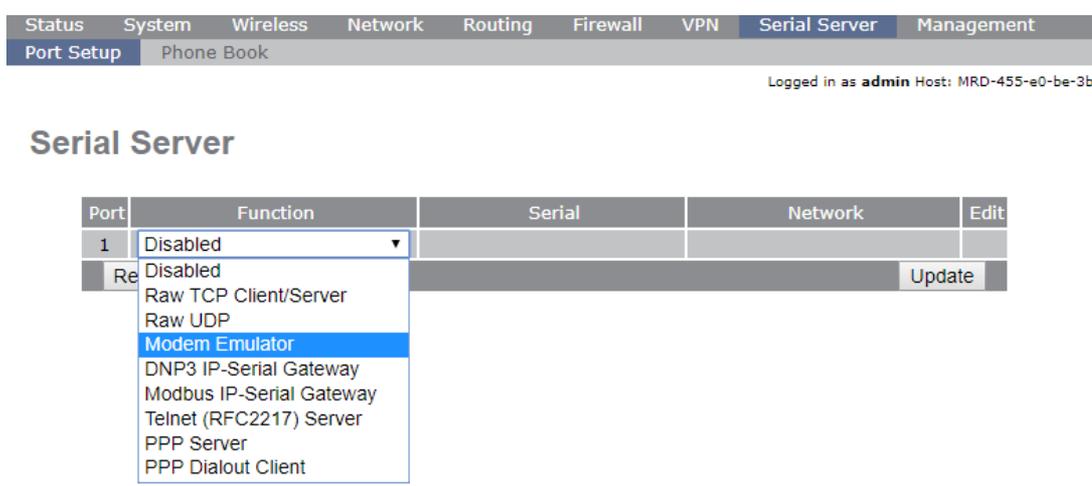


The screenshot shows the MRD-455 web interface. The top navigation bar includes: Status, System, Wireless, Network, Routing, Firewall, VPN, Serial Server, and Management. The 'Serial Server' menu is active, and the 'Port Setup' sub-menu is selected. Below the navigation bar, there is a table with the following data:

Port	Function	Serial	Network	Edit
1	Disabled			

Buttons for 'Reset' and 'Update' are visible at the bottom of the table.

Select **Modem Emulator** from the Function dropdown list.



The screenshot shows the MRD-455 web interface with the 'Function' dropdown menu open. The dropdown list contains the following options:

- Disabled
- Raw TCP Client/Server
- Raw UDP
- Modem Emulator** (highlighted)
- DNP3 IP-Serial Gateway
- Modbus IP-Serial Gateway
- Telnet (RFC2217) Server
- PPP Server
- PPP Dialout Client

The table below the dropdown menu shows the configuration for Port 1:

Port	Function	Serial	Network	Edit
1	Disabled			

Buttons for 'Reset' and 'Update' are visible at the bottom of the table.

ATD DIAL STRING TO FIXED DESTINATION

MRD-455 Modem Emulation Configuration

Click the Edit icon to configure the Modem Emulation settings.



The screenshot shows the MRD-455 web interface. At the top, there's a navigation menu with options: Status, System, Wireless, Network, Routing, Firewall, VPN, Serial Server, and Management. Below this is a sub-menu with 'Port Setup' and 'Phone Book'. The main content area is titled 'Serial Server' and contains a table with the following data:

Port	Function	Serial	Network	Edit
1	Modem Emulator	19200 8N1	Accept: 6001, Dial: :6001	

Below the table are buttons for 'Reset' and 'Update'. At the bottom, there's a 'Port Control' section with a 'Reset Port 1' button.

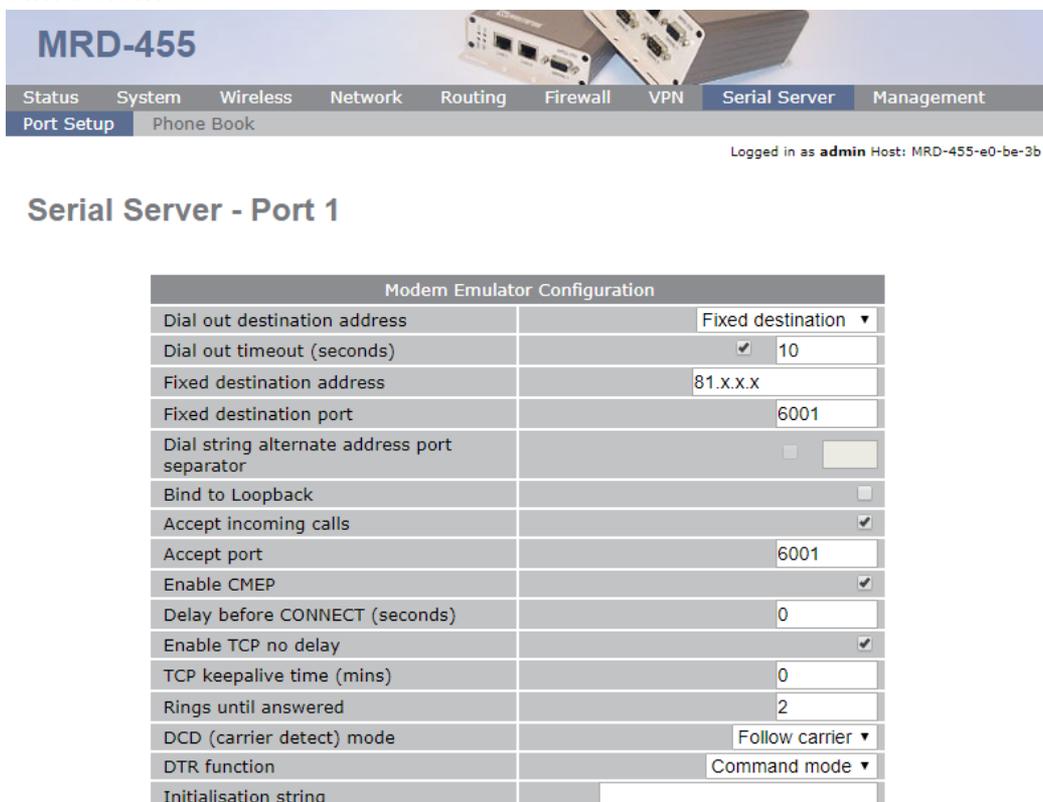
Dial out destination address: Fixed destination

Fixed destination address: Enter the fixed broadband IP address

Fixed destination port: 6001*

Enable CMEP: ✓

* Choose an appropriate **fixed destination port**. This should be the same as the **Accept port** on the remote **BRD-355** DSL Router. If in doubt use the default Destination / Accept ports shown below.



The screenshot shows the MRD-455 web interface with the 'Serial Server - Port 1' configuration page. The page title is 'Modem Emulator Configuration'. The configuration fields are as follows:

Dial out destination address	Fixed destination
Dial out timeout (seconds)	<input checked="" type="checkbox"/> 10
Fixed destination address	81.x.x.x
Fixed destination port	6001
Dial string alternate address port separator	<input type="checkbox"/>
Bind to Loopback	<input type="checkbox"/>
Accept incoming calls	<input checked="" type="checkbox"/>
Accept port	6001
Enable CMEP	<input checked="" type="checkbox"/>
Delay before CONNECT (seconds)	0
Enable TCP no delay	<input checked="" type="checkbox"/>
TCP keepalive time (mins)	0
Rings until answered	2
DCD (carrier detect) mode	Follow carrier
DTR function	Command mode
Initialisation string	

ATD DIAL STRING TO FIXED DESTINATION

MRD-455 Port Configuration (RS232)

These settings should correspond to the RS232 port settings of your local serial equipment/PLC etc.

Baudrate: Choose the same baudrate as the local serial device.

Data bits: Enter the same data bits as the local serial device.

Stop Bits: Enter the same number of stop bits as the local serial device.

Parity: Enter the same parity setting as the local serial device.

Port Configuration	
Baudrate	19200 ▼
Data bits	8 ▼
Stop bits	1 ▼
Parity	None ▼
Flow control	None ▼
Line state when disconnected	<input type="checkbox"/> RTS <input type="checkbox"/> DTR
Network congestion backoff signal	<input type="checkbox"/> RTS <input type="checkbox"/> DTR

FIXED DESTINATION: ANSWERING A CALL

This method is used when the legacy serial device is expecting to answer a modem call with the ATA string.

Browse to Serial **Server** > **Port Setup**.



Serial Server

Port	Function	Serial	Network	Edit
1	Disabled			
Reset				Update

Select **Modem Emulator** from the Function dropdown list.



Serial Server

Port	Function	Serial	Network	Edit
1	Disabled			
Reset				Update

ATD DIAL STRING TO FIXED DESTINATION

BRD-355 Modem Emulation Configuration

Click the Edit icon to configure the Modem Emulation settings.

Status System DSL Network Routing Firewall VPN **Serial Server** Management
 Port Setup Phone Book

Logged in as **admin** Host: BRD-355-e1-21-02

Serial Server

Port	Function	Serial	Network	Edit
1	Modem Emulator	19200 8N1	Accept: 6001, Dial: :6001	
Reset			Update	

Port Control
 Reset Port 1

Accept Incoming calls: ✓

Accept port: 6001*

Enable CMEP: ✓

NB: If you want the BRD-355 to answer the call automatically, set a value of 1 or above in the **Rings until answered** field.

* Choose an appropriate **Accept port**. This should be the same as the **fixed destination port** on the calling **MRD-455** DSL Router. If in doubt use the default Destination / Accept ports shown below.

BRD-355

Status System DSL Network Routing Firewall VPN **Serial Server** Management
 Port Setup Phone Book

Logged in as **admin** Host: BRD-355-e1-21-02

Serial Server - Port 1

Modem Emulator Configuration	
Dial out destination address	Fixed destination
Dial out timeout (seconds)	<input checked="" type="checkbox"/> 10
Fixed destination address	
Fixed destination port	6001
Dial string alternate address port separator	<input type="checkbox"/>
Bind to Loopback	<input type="checkbox"/>
Accept incoming calls	<input checked="" type="checkbox"/>
Accept port	6001
Enable CMEP	<input checked="" type="checkbox"/>
Delay before CONNECT (seconds)	0
Enable TCP no delay	<input type="checkbox"/>
TCP keepalive time (mins)	0
Rings until answered	0
DCD (carrier detect) mode	Follow carrier
DTR function	Disconnect
Initialisation string	

ATD DIAL STRING TO FIXED DESTINATION

BRD-355 Port Configuration (RS232)

These settings should correspond to the RS232 port settings of your local serial equipment/PLC etc.

Baudrate: Choose the same baudrate as the local serial device.

Data bits: Enter the same data bits as the local serial device.

Stop Bits: Enter the same number of stop bits as the local serial device.

Parity: Enter the same parity setting as the local serial device.

Port Configuration	
Baudrate	19200 ▼
Data bits	8 ▼
Stop bits	1 ▼
Parity	None ▼
Flow control	None ▼
Line state when disconnected	<input type="checkbox"/> RTS <input type="checkbox"/> DTR
Network congestion backoff signal	<input type="checkbox"/> RTS <input type="checkbox"/> DTR

ATD DIAL STRING TO FIXED DESTINATION

Using the Fixed Destination Modem Emulator

Because the MRD-455 is configured to 'call' a fixed destination, any number can be used with the dial string as long as it starts with ATD.

NB: Entered commands are in red text. Responses are in black text.

MRD-455 Calling

Making the call.

`ATD0123456789<cr>`

OK

Connect

Sending data

`Hello world`

Ending the call with the escape sequence.

`+++<pause>ATH`

OK

BRD-355 Answering

RING

RING

Answer the call

`ATA<cr>`

Connect

Receiving data

Hello world

+++

no carrier

PHONE BOOK METHOD

This method is used when the legacy serial devices are expecting to be making calls to various locations.

An AT command interface will be generated at the serial port. The legacy serial equipment making the call will send an ATD dial string to an associated destination as if it was connected to a modem. But instead of making a dial up connection over a PSTN line, the MRD-455 will create a transparent TCP data pipe to a fixed destination IP address to a BRD-355 DSL router.

When the TCP connection has been established, the BRD-355 will send a series of ‘RING’ alerts out of it’s serial port until the legacy equipment sends an ATA command to pick up the ‘call’. Once the ‘call’ has been answered, serial data can be sent transparently between the two legacy devices over an TCP/IP connection as if it was over a PSTN line.

This MRD-455 Modem Emulation Configuration

Browse to Serial **Server** > **Port Setup**.

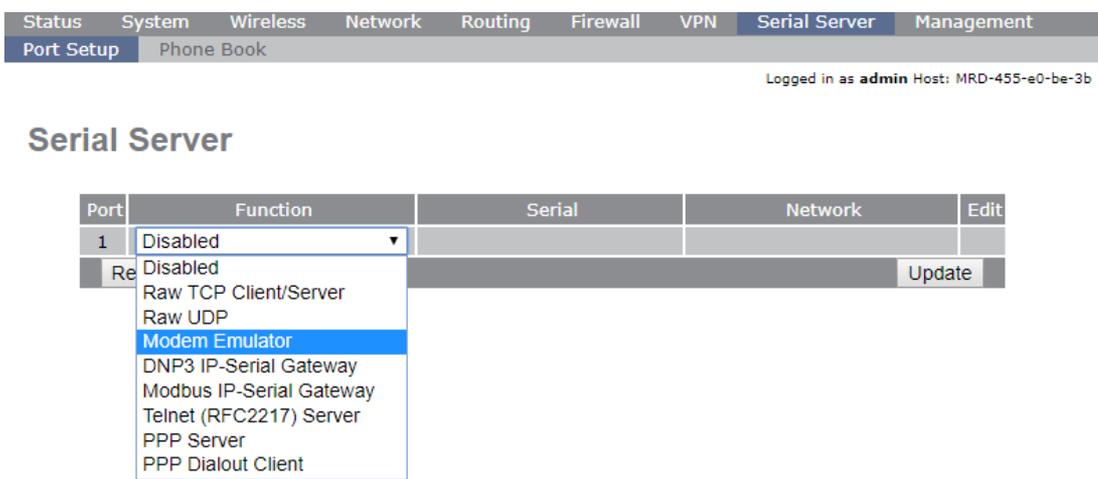


The screenshot shows the MRD-455 web interface. The navigation menu includes: Status, System, Wireless, Network, Routing, Firewall, VPN, Serial Server, and Management. The 'Serial Server' section is active, and the 'Port Setup' sub-section is selected. The page title is 'MRD-455'. The user is logged in as 'admin' on host 'MRD-455-e0-be-3b'. The 'Serial Server' table has the following data:

Port	Function	Serial	Network	Edit
1	Disabled			

Buttons for 'Reset' and 'Update' are visible at the bottom of the table.

Select **Modem Emulator** from the Function dropdown list.



The screenshot shows the MRD-455 web interface with the 'Function' dropdown menu open. The menu options are: Disabled, Raw TCP Client/Server, Raw UDP, Modem Emulator (highlighted), DNP3 IP-Serial Gateway, Modbus IP-Serial Gateway, Telnet (RFC2217) Server, PPP Server, and PPP Dialout Client. The user is logged in as 'admin' on host 'MRD-455-e0-be-3b'.

PHONE BOOK METHOD

MRD-455 Modem Emulation Configuration

Click the Edit icon to configure the Modem Emulation settings.



The screenshot shows the MRD-455 web interface. At the top, there's a navigation menu with options: Status, System, Wireless, Network, Routing, Firewall, VPN, Serial Server, and Management. Under 'Serial Server', there are sub-menus for 'Port Setup' and 'Phone Book'. The main content area is titled 'Serial Server' and contains a table with the following data:

Port	Function	Serial	Network	Edit
1	Modem Emulator	19200 8N1	Accept: 6001, Dial: :6001	

Below the table are 'Reset' and 'Update' buttons. Further down, there's a 'Port Control' section with a 'Reset Port 1' button. The user is logged in as 'admin' on host 'MRD-455-e0-be-3b'.

Dial out destination address: From phone book
Enable CMEP: ✓



The screenshot shows the MRD-455 web interface, specifically the 'Serial Server - Port 1' configuration page. The navigation menu is the same as in the previous screenshot. The main content area is titled 'Modem Emulator Configuration' and contains the following settings:

Dial out destination address	From phone book
Dial out timeout (seconds)	<input checked="" type="checkbox"/> 10
Fixed destination address	
Fixed destination port	6001
Dial string alternate address port separator	<input type="checkbox"/>
Bind to Loopback	<input type="checkbox"/>
Accept incoming calls	<input checked="" type="checkbox"/>
Accept port	6001
Enable CMEP	<input checked="" type="checkbox"/>
Delay before CONNECT (seconds)	0
Enable TCP no delay	<input checked="" type="checkbox"/>
TCP keepalive time (mins)	0
Rings until answered	2
DCD (carrier detect) mode	Follow carrier
DTR function	Command mode
Initialisation string	

The user is logged in as 'admin' on host 'MRD-455-e0-be-3b'.

PHONE BOOK METHOD

MRD-455 Port Configuration (RS232)

These settings should correspond to the RS232 port settings of your local serial equipment/PLC etc.

Baudrate: Choose the same baudrate as the local serial device.

Data bits: Enter the same data bits as the local serial device.

Stop Bits: Enter the same number of stop bits as the local serial device.

Parity: Enter the same parity setting as the local serial device.

Port Configuration	
Baudrate	19200 ▼
Data bits	8 ▼
Stop bits	1 ▼
Parity	None ▼
Flow control	None ▼
Line state when disconnected	<input type="checkbox"/> RTS <input type="checkbox"/> DTR
Network congestion backoff signal	<input type="checkbox"/> RTS <input type="checkbox"/> DTR

MRD-455 Phone Book Configuration

In this example there are 2 phone book entries to 2 destinations.

Browse to Serial Server > Phone Book.

Click the **Add new phone book entry** button.



Phone Book

Phonebook Entries	
Display	Add new phone book entry
Download the current phone book	
phonebook.txt (right click to save)	
Upload a phone book	
Select file	Choose file No file chosen
Replace	Append

PHONE BOOK METHOD (Site A)

Add new phone book entry

Enter the details for the first destination.

Description: Enter a description for the first destination. E.g. a site name.

Dial string: Enter a dial string associated with the first destination.

(The phone number does not need to exist.)

NB: Do not include the ATD in the Dial string field, this is assumed.



Phone Book

Editing entry	
Description	Site A
Dial string	02022334455
Back	Update

Add new connection entry

Enter the destination IP address and port to be associated with the above dial string.

Description: Enter a description for the first destination. E.g. a site name.

Connect address: Enter the broadband IP address of the BRD-355 associated with the first destination.

Connect Port: Enter the destination port (same as the Accept Port on the destination BRD-355).



Phone Book

Add new connection entry	
Description	Site A
Connect address	217.40.6.100
Connect port	6001
Cancel	Update

PHONE BOOK METHOD (Site B)

Add new phone book entry

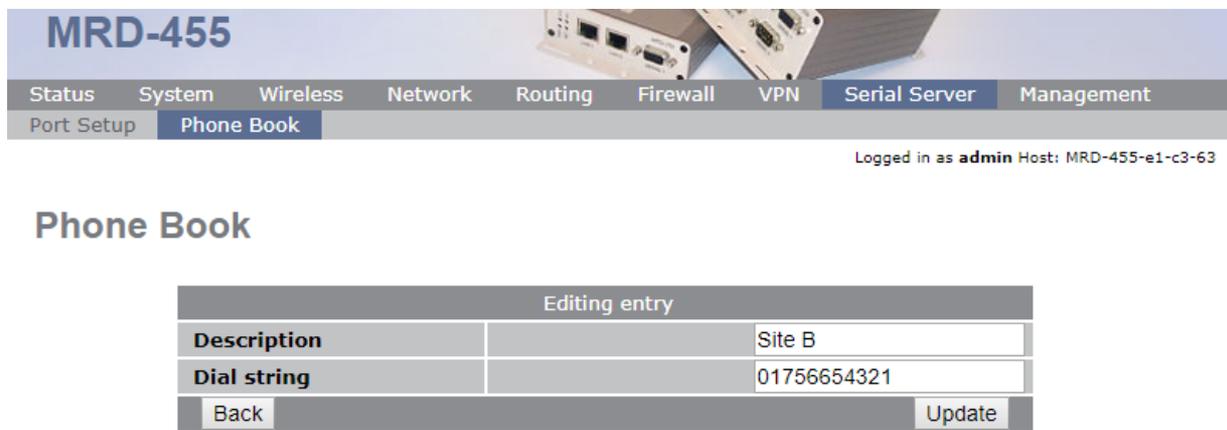
Enter the details for the second destination.

Description: Enter a description for the second destination. E.g. a site name.

Dial string: Enter a dial string associated with the second destination.

(The phone number does not need to exist)

NB: Do not include the ATD in the Dial string field, this is assumed.



The screenshot shows the MRD-455 web interface. The top navigation bar includes: Status, System, Wireless, Network, Routing, Firewall, VPN, Serial Server, and Management. The 'Serial Server' tab is active. Below the navigation bar, there are sub-tabs: Port Setup and Phone Book. The 'Phone Book' sub-tab is selected. The page title is 'MRD-455'. A status bar at the top right indicates 'Logged in as admin Host: MRD-455-e1-c3-63'. The main content area is titled 'Phone Book' and contains a form for 'Editing entry'. The form has two input fields: 'Description' with the value 'Site B' and 'Dial string' with the value '01756654321'. At the bottom of the form are two buttons: 'Back' and 'Update'.

Add new connection entry

Enter the destination IP address and port to be associated with the above dial string.

Description: Enter a description for the second destination. E.g. a site name.

Connect address: Enter the broadband IP address of the BRD-355 associated with the second destination.

Connect Port: Enter the destination port (same as the Accept Port on the destination BRD-355).



The screenshot shows the MRD-455 web interface. The top navigation bar includes: Status, System, Wireless, Network, Routing, Firewall, VPN, Serial Server, and Management. The 'Serial Server' tab is active. Below the navigation bar, there are sub-tabs: Port Setup and Phone Book. The 'Phone Book' sub-tab is selected. The page title is 'MRD-455'. A status bar at the top right indicates 'Logged in as admin Host: MRD-455-e0-be-3b'. The main content area is titled 'Phone Book' and contains a form for 'Add new connection entry'. The form has three input fields: 'Description' with the value 'Site B', 'Connect address' with the value '81.100.2.1', and 'Connect port' with the value '6001'. At the bottom of the form are two buttons: 'Cancel' and 'Update'.

PHONE BOOK DESTINATION: ANSWERING A CALL

This method is used when the legacy serial device is expecting to answer a modem call with the ATA string.

Browse to Serial Server > Port Setup.



Logged in as **admin** Host: BRD-355-e1-21-02

Serial Server

Port	Function	Serial	Network	Edit
1	Disabled			
<input type="button" value="Reset"/>				<input type="button" value="Update"/>

Select **Modem Emulator** from the Function dropdown list.



Logged in as **admin** Host: BRD-355-e1-21-02

Serial Server

Port	Function	Serial	Network	Edit
1	<div style="border: 1px solid black; padding: 2px;"> Disabled Raw TCP Client/Server Raw UDP Modem Emulator DNP3 IP-Serial Gateway Modbus IP-Serial Gateway Telnet (RFC2217) Server PPP Server PPP Dialout Client </div>			
<input type="button" value="Reset"/>				<input type="button" value="Update"/>

PHONE BOOK DESTINATION: ANSWERING A CALL

BRD-355 Modem Emulation Configuration

Click the Edit icon to configure the Modem Emulation settings.

Status System DSL Network Routing Firewall VPN **Serial Server** Management
 Port Setup Phone Book

Logged in as **admin** Host: BRD-355-e1-21-02

Serial Server

Port	Function	Serial	Network	Edit
1	Modem Emulator	19200 8N1	Accept: 6001, Dial: :6001	
Reset		Update		

Port Control	
Reset Port 1	

Accept Incoming calls: ✓

Accept port: 6001*

Enable CMEP: ✓

NB: If you want the BRD-355 to answer the call automatically, set a value of 1 or above in the **Rings until answered** field.

* Choose an appropriate **Accept port**. This should be the same as the **fixed destination port** on the calling **MRD-455** DSL Router. If in doubt use the default Destination / Accept ports shown below.

BRD-355

Status System DSL Network Routing Firewall VPN **Serial Server** Management
 Port Setup Phone Book

Logged in as **admin** Host: BRD-355-e1-21-02

Serial Server - Port 1

Modem Emulator Configuration	
Dial out destination address	Fixed destination
Dial out timeout (seconds)	<input checked="" type="checkbox"/> 10
Fixed destination address	
Fixed destination port	6001
Dial string alternate address port separator	<input type="checkbox"/>
Bind to Loopback	<input type="checkbox"/>
Accept incoming calls	<input checked="" type="checkbox"/>
Accept port	6001
Enable CMEP	<input checked="" type="checkbox"/>
Delay before CONNECT (seconds)	0
Enable TCP no delay	<input type="checkbox"/>
TCP keepalive time (mins)	0
Rings until answered	0
DCD (carrier detect) mode	Follow carrier
DTR function	Disconnect
Initialisation string	

PHONE BOOK DESTINATION: ANSWERING A CALL

BRD-355 Port Configuration (RS232)

These settings should correspond to the RS232 port settings of your local serial equipment/PLC etc.

Baudrate: Choose the same baudrate as the local serial device.

Data bits: Enter the same data bits as the local serial device.

Stop Bits: Enter the same number of stop bits as the local serial device.

Parity: Enter the same parity setting as the local serial device.

Port Configuration	
Baudrate	19200 ▼
Data bits	8 ▼
Stop bits	1 ▼
Parity	None ▼
Flow control	None ▼
Line state when disconnected	<input type="checkbox"/> RTS <input type="checkbox"/> DTR
Network congestion backoff signal	<input type="checkbox"/> RTS <input type="checkbox"/> DTR

ATD DIAL STRING TO FIRST PHONE BOOK ENTRY

Using the Fixed Destination Modem Emulator

Because the MRD-455 is configured to 'call' a fixed destination, any number can be used with the dial string as long as it starts with ATD.

NB: Entered commands are in red text. Responses are in black text.

MRD-455 Calling

TCP Connection to BRD-355 IP address
Making the call to **Site A**.
`ATD02022334455<cr>`
OK
Connect
Sending data
`Hello world`
Ending the call with the escape sequence.
`+++<pause>ATH`
OK

BRD-355 Answering

RING
RING
Answer the call
`ATA<cr>`
Connect
Receiving data
Hello world
+++
no carrier

Raw TCP Client / Server Mode

This method is used when the serial device is expecting the dial strings to be handled by the modem.

No AT command interface will be generated at the serial port. When the port is selected from the virtual console, a transparent data pipe is created between the serial port and the wireless port. But instead of making a call over a PSTN or Leased line, the router will create a TCP connection over the xDSL/4G network to a remote IP address and port.

In this example, when an MRD-455 4G router receives data to send on it's RS23 serial port, it will make a TCP client connection to a BRD-355 broadband router TCP server. The received data will be sent out of the serial ports to legacy serial equipment.

MRD-455 TCP Client Configuration

Browse to Serial Server > Port Setup.

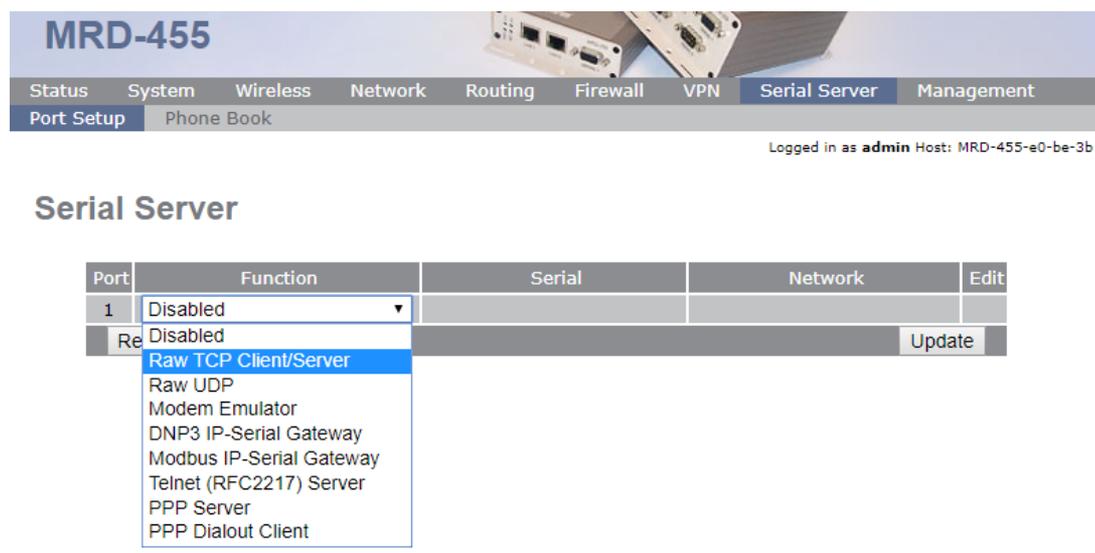


The screenshot shows the MRD-455 web interface. The navigation menu includes Status, System, Wireless, Network, Routing, Firewall, VPN, Serial Server, and Management. The 'Serial Server' section is active, and the 'Port Setup' sub-tab is selected. The main content area shows a table for configuring serial ports:

Port	Function	Serial	Network	Edit
1	Disabled			

Below the table are 'Reset' and 'Update' buttons. The user is logged in as 'admin' on host 'MRD-455-e0-be-3b'.

Select Raw TCP Client/Server from the dropdown list.



This screenshot shows the same MRD-455 web interface, but the 'Function' dropdown menu for port 1 is open. The menu options are:

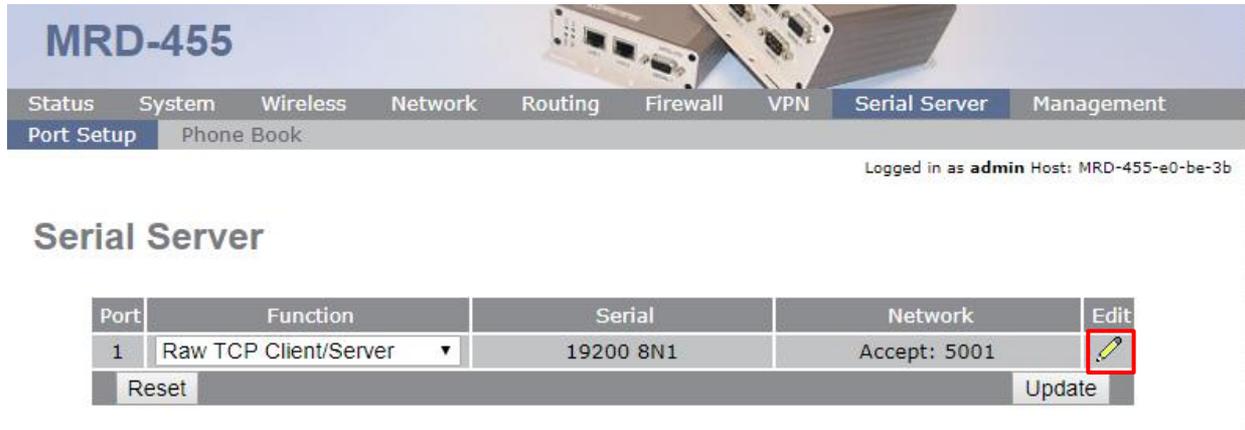
- Raw TCP Client/Server
- Raw UDP
- Modem Emulator
- DNP3 IP-Serial Gateway
- Modbus IP-Serial Gateway
- Telnet (RFC2217) Server
- PPP Server
- PPP Dialout Client

The 'Raw TCP Client/Server' option is highlighted. The rest of the interface, including the table and navigation menu, remains the same as in the previous screenshot.

Raw TCP Client / Server Mode

MRD-455 TCP Client Configuration

Click the Edit icon to configure the TCP Client settings.



MRD-455

Status System Wireless Network Routing Firewall VPN **Serial Server** Management

Port Setup Phone Book

Logged in as **admin** Host: MRD-455-e0-be-3b

Serial Server

Port	Function	Serial	Network	Edit
1	Raw TCP Client/Server	19200 8N1	Accept: 5001	

Reset Update

In this example the settings have been configured for an on demand connection. However if you want the TCP socket to the server to be always on, use the default **Connect** setting, instead of the on demand option and Disable the **Disconnect on idle (secs)** option.

Network type: Connect on demand

Connect address: Enter the IP address of the destination BRD-355

Connect Port: enter the destination port for the TCP connection.

NB: The connect port should be the same as the Accept Port on the destination BRD-355.

Disconnect on idle (secs): Any data

Then set a time in seconds after the which period of no data, the connection is allowed to disconnect.



MRD-455

Status System Wireless Network Routing Firewall VPN **Serial Server** Management

Port Setup Phone Book

Logged in as **admin** Host: MRD-455-e0-be-3b

Serial Server - Port 1

Raw TCP Configuration	
Network type	Connect on demand
Connect address	81.x.x.x
Connect port	5001
Bind to Loopback	<input type="checkbox"/>
Timeout after failed connect (secs)	30
Failed connects before giving up	10
Accept port	5001
Allow new connections to replace existing	<input checked="" type="checkbox"/>
Disconnect on idle (secs)	Any data 10
Enable TCP no delay	<input type="checkbox"/>

Raw TCP Client / Server Mode

MRD-455 TCP Client Configuration

These settings should correspond to the RS232 port settings of your local serial equipment/PLC etc.

Baudrate: Choose the same baudrate as the local serial device.

Data bits: Enter the same data bits as the local serial device.

Stop Bits: Enter the same number of stop bits as the local serial device.

Parity: Enter the same parity setting as the local serial device.

Port Configuration	
Baudrate	19200 ▼
Data bits	8 ▼
Stop bits	1 ▼
Parity	None ▼
Flow control	None ▼
Line state when disconnected	<input type="checkbox"/> RTS <input type="checkbox"/> DTR
Network congestion backoff signal	<input type="checkbox"/> RTS <input type="checkbox"/> DTR

The MRD-455 is now ready to send serial client data.

Raw TCP Client / Server Mode

BRD-355 TCP Server Configuration

When the BRD-355 receives data to port 5001 (the Accept Port), it will forward this data out of the serial port to the waiting legacy serial device/PLC etc.

Browse to Serial **Server** > **Port Setup**.



Logged in as **admin** Host: BRD-355-e1-21-02

Serial Server

Port	Function	Serial	Network	Edit
1	Disabled			
Reset				Update

Select **Raw TCP Client/Server** from the Function dropdown list.



Logged in as **admin** Host: BRD-355-e1-21-02

Serial Server

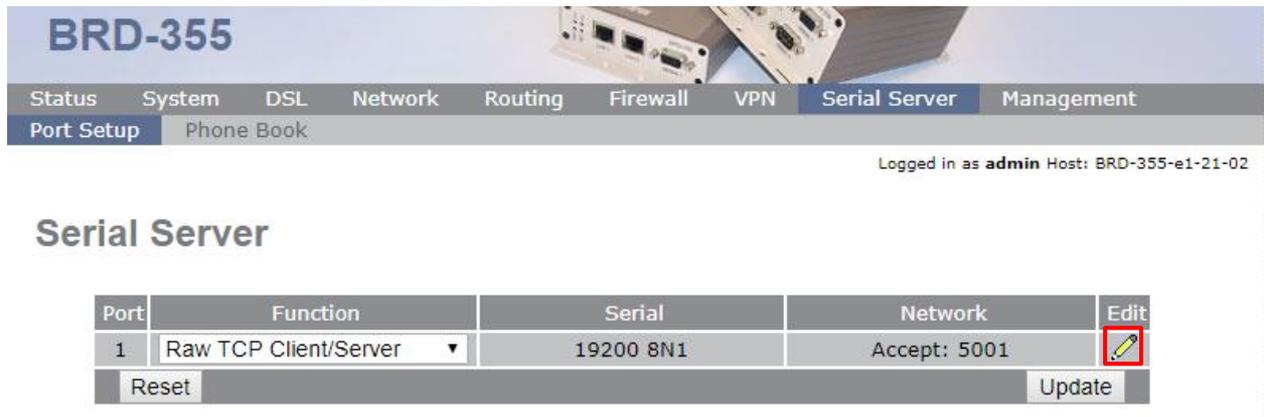
Port	Function	Serial	Network	Edit
1	Disabled			
Reset				Update

- Raw TCP Client/Server
- Raw UDP
- Modem Emulator
- DNP3 IP-Serial Gateway
- Modbus IP-Serial Gateway
- Telnet (RFC2217) Server
- PPP Server
- PPP Dialout Client

Raw TCP Client / Server Mode

BRD-355 TCP Server Configuration

Click the Edit icon to configure the TCP Server settings.



BRD-355

Status System DSL Network Routing Firewall VPN **Serial Server** Management

Port Setup Phone Book

Logged in as **admin** Host: BRD-355-e1-21-02

Serial Server

Port	Function	Serial	Network	Edit
1	Raw TCP Client/Server	19200 8N1	Accept: 5001	

Reset Update

By default the BRD-355 is configured to accept TCP serial server connections to port 5001. Therefore in this example no changes have been made.

Network Type: Accept
Accept port: 5001



BRD-355

Status System DSL Network Routing Firewall VPN **Serial Server** Management

Port Setup Phone Book

Logged in as **admin** Host: BRD-355-e1-21-02

Serial Server - Port 1

Raw TCP Configuration	
Network type	Accept
Connect address	
Connect port	5001
Bind to Loopback	<input type="checkbox"/>
Timeout after failed connect (secs)	30
Failed connects before giving up	10
Accept port	5001
Disconnect on new accept	<input checked="" type="checkbox"/>
Disconnect on idle (secs)	Disable 0
Enable TCP no delay	<input type="checkbox"/>
TCP keepalive time (mins)	0

Raw TCP Client / Server Mode

BRD-355 Port Configuration (RS232)

These settings should correspond to the RS232 port settings of your local serial equipment/PLC etc.

Baudrate: Choose the same baudrate as the local serial device.

Data bits: Enter the same data bits as the local serial device.

Stop Bits: Enter the same number of stop bits as the local serial device.

Parity: Enter the same parity setting as the local serial device.

Port Configuration	
Baudrate	19200 ▼
Data bits	8 ▼
Stop bits	1 ▼
Parity	None ▼
Flow control	None ▼
Line state when disconnected	<input type="checkbox"/> RTS <input type="checkbox"/> DTR
Network congestion backoff signal	<input type="checkbox"/> RTS <input type="checkbox"/> DTR

The BRD-355 is now ready to receive serial server data.

Revision history for version 1.0

Revision	Rev by	Revision note	Date
1.0	JM	Initial Release	
1.1	JM	Phonebook method. Pg 15 & 16. Remove ATD from Dial string field. The ATD is assumed.	01.07.2019



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