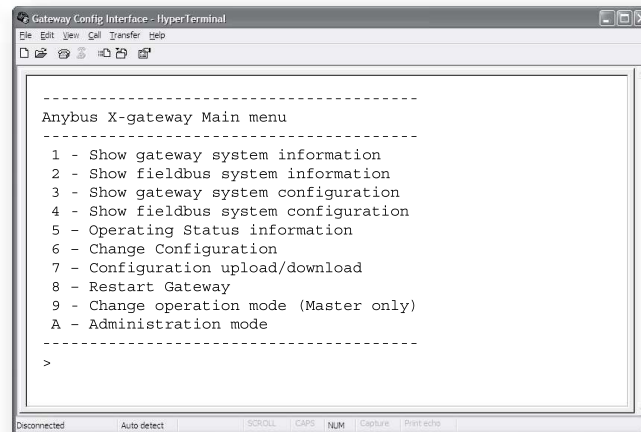# Gateway Config Interface

General Information

Generally, the X-gateway requires very little effort to get up and running. However, since all networks are different, certain settings may need to be adjusted slightly to fit a particular application. This is achieved through the Gateway Config Interface, which features a text based user interface that can be accessed using standard terminal emulation software (such as the Microsoft HyperTerminal).

From the physical point of view, this is a standard RS232 interface with the following properties:

Baudrate:	57600
Data bits:	8
Parity:	None
Stop bits:	1
Flow control:	None

```
--------------------------------------
Anybus X-gateway Main menu
--------------------------------------
 1 - Show gateway system information
 2 - Show fieldbus system information
 3 - Show gateway system configuration
 4 - Show fieldbus system configuration
 5 - Operating Status information
 6 - Change Configuration
 7 - Configuration upload/download
 8 - Restart Gateway
 9 - Change operation mode (Master only)
 A - Administration mode
--------------------------------------
 >
```
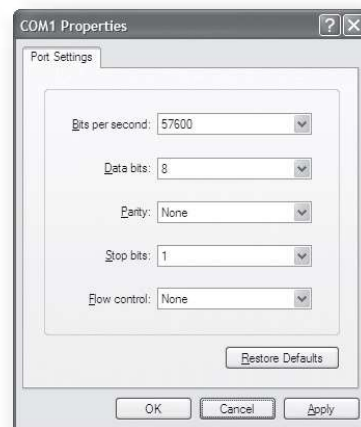
Note: This document covers common settings available on all gateway configurations (with some minor exceptions). Network-specific settings are, when applicable, described separately in the interface addendums for your product.

See also...

- 4-1 "Gateway Config Interface"
- 4-1 "Null Modem Cable Schematic"

Communication Settings

1. Connect a null-modem cable between the Gateway Config Interface and a COM-port on the PC.

2. Start the Windows HyperTerminal

3. HyperTerminal will prompt for a name to use for the new connection. Name the connection 'Gateway Config connection', and click 'OK'

4. Specify which interface to use for the connection (select the COM port that is connected to the gateway, in this particular case COM1), and click 'OK'.

5. HyperTerminal will now prompt for the communication properties for the interface. Ensure that the settings match that of the Gateway Config Interface and click 'OK'.

6. Done.

   Power up the gateway and proceed with the steps described on the following pages.

Invoking the Menu Interface

The gateway displays several diagnostic messages during startup. To enter the main menu, press <Esc>.

```
Verifying application firmware.....OK
Performing Hardware check..........OK
Mounting flash disk................OK

Gateway initialising.....Please wait

Verifying file system and generating configuration.....

Both Anybus modules are OK. Exchanging data.

Press ESC to enter configuration interface
```

Main Menu

The main menu holds the following entries:

```
---------------------------------------
Anybus X-gateway Main menu
---------------------------------------
 1 - Show gateway system information
 2 - Show fieldbus system information
 3 - Show gateway system configuration
 4 - Show fieldbus system configuration
 5 - Operating Status information
 6 - Change Configuration
 7 - Configuration upload/download
 8 - Restart Gateway
 9 - Change operation mode (Master only)
 A - Administration mode
---------------------------------------
>
```

To enter a menu, type the corresponding digit and press <Enter>. Note that it is possible to return to the main menu at any point by pressing <Esc>.

Entry	Meaning	Page
1	Display general information about the system.	3-4
2	Display general information about the on-board network interfaces	3-4
3	Display the current system configuration	3-4
4	Display the current network configuration	3-5
5	Display the current operating status.	3-6
6	Alter the network configuration.	3-7
7	Upload/Download a predefined configuration	3-9.
8	Restarts the gateway. The gateway will prompt for confirmation.	-
9	Changes the current operation mode (Master configurations only)	3-10
A	Provides access to administrative functions (Expert users only) **Note:** HMS offers no technical support regarding this menu entry. Do not use the functions provided through this menu unless explicitly instructed to do so by the HMS technical support department.	-

Show Gateway System Information

This menu provides general information about the gateway system firmware.

```
--------------------------------------------------
 Gateway System information
--------------------------------------------------
 Bootloader Version:                       1.22.1
 Application Version:                       3.10.2
 Product Version:                           3.10.2
 Serial Number (Hex):                    FFFFFFFF
--------------------------------------------------
 Press ESC to continue
```

(Press <Esc> to return to the main menu).

Show Fieldbus System Information

This menu provides general information about the on-board network interfaces.

```
--------------------------------------------------
 Fieldbus System information
--------------------------------------------------
 Ethernet IP + MBTCP + WEB Slave (Upper)

 Bootloader Version:                         01.14
 Application Version:                         01.31
 Serial Number (Hex):                     A004877A
 Ethernet Mac ID (Hex):        00-30-11-02-3E-45
--------------------------------------------------
 Modbus RTU Slave (Lower)

 Bootloader Version:                         01.01
 Application Version:                         01.04
 Serial Number (Hex):                     FFFFFFFF
--------------------------------------------------
 Press ESC to continue
```

(Press <Esc> to return to the main menu).

Show Gateway System Configuration

This menu shows the current gateway system configuration.

```
--------------------------------------------------
 Gateway system configuration
--------------------------------------------------
 Reboot after disconnection:          Enabled
--------------------------------------------------
 Press ESC to continue
```

(Press <Esc> to return to the main menu).

See also...

- 3-7 "Change Configuration" (3-8 "Settings")

Show Fieldbus System Configuration

This menu shows the current configuration of the on-board network interfaces.

```
-------------------------------------------------
 Fieldbus system configuration
-------------------------------------------------
 Ethernet IP + MBTCP + WEB Slave (Upper)

 Input I/O data size (bytes):                  20
 Output I/O data size (bytes):                 20
 Offline option:                            Clear
 Control word / Status word:             Disabled
 Modbus Address Mode:                     Enabled
-------------------------------------------------
 Modbus RTU Slave (Lower)

 Input I/O data size (bytes):                  20
 Output I/O data size (bytes):                 20
 Input Parameter data size (bytes):             0
 Output Parameter data size (bytes):            0
 Offline option:                            Clear
 Control word / Status word:             Disabled
 Offline timeout (ms/0=disabled):               0
-------------------------------------------------
 Press ESC to continue
```

(Press <Esc> to return to the main menu).

See also...

Operating Status Information

This menu shows the current operating status of the gateway, which is derived from the Control- and Status Words.

```
--------------------------------------------------
Operating Status information
--------------------------------------------------
PROFIBUS Master (Upper)

Cycle counter:                                   3
Error counter:                                   0
Operation mode:                               Stop
Module status:                         Initialised
Network status:                            Offline
Status word value (Hex):                      3002
--------------------------------------------------
Modbus RTU Slave (Lower)

Cycle counter:                                   3
Error counter:                                   0
Module status:                         Initialised
Network status:                             Online
Status word value (Hex):                      3003
--------------------------------------------------
Press ESC to continue
```

(Press <Esc> to return to the main menu).

See also...

- 2-2 "Status & Diagnostics" (2-2 "Status Word", 2-4 "Control Word")
- 3-7 "Change Configuration" (3-8 "Settings")

Change Configuration

General Information

This menu is used when specifying basic operational properties for the gateway and the on-board network interfaces. It may be necessary for the gateway to go offline. In such case, the following message will be appear:

```
Both networks will go offline
Is this OK? (Y/N)
```

To continue, press 'Y'. The available settings will now be listed in three sections; settings for the upper network interface, settings for the lower network interface, and general gateway settings.

Use '+' and '-' to toggle between different possible settings. Numerical values are changed by typing the new value in decimal format followed by <Enter>.

```
--------------------------------------------------
Change configuration
--------------------------------------------------
Ethernet IP + MBTCP + WEB Slave (Upper)

Input I/O data size (bytes):               20
Output I/O data size (bytes):              20
Offline option (+/-):                   Clear
Control / Status word (+/-):         Disabled
Modbus Address Mode (+/-):            Enabled
--------------------------------------------------
Modbus RTU Slave (Lower)

Input I/O data size (bytes):               20
Output I/O data size (bytes):              20
Input Parameter data size (bytes):          0
Output Parameter data size (bytes):         0
Offline option (+/-):                   Clear
Control / Status word (+/-):         Disabled
Offline timeout (ms/0=disabled):            0
--------------------------------------------------
Gateway configuration

Reboot after disconnection (+/-):     Enabled
```

When done, the gateway will ask if the changes shall be stored.

```
Store Configuration (Y/N)?    Yes
```

To store the changes, press 'Y'. The gateway must be restarted in order for any changes to have effect.

```
Configuration stored!

Do you want to restart gateway to execute all changes (Y/N)?   Yes
```

Press 'Y' to restart the gateway. Once the gateway has restarted, the new settings will become active.

Settings

Network Interface Settings

The following table lists common settings available on most network interfaces. Note that depending on the network in question, certain settings may be unavailable.

Consult the separate interface addendums for your product for further information.

Setting	Meaning
Input I/O data size (bytes)[ab]	Specifies the amount of cyclic input data (gateway to network).
Output I/O data size (bytes)[ab]	Specifies the amount of cyclic output data (network to gateway).
Input Parameter data size (bytes)[ab]	Specifies the amount of acyclic input data (gateway to network).
Output Parameter data size (bytes)[ab]	Specifies the amount of acyclic output data (network to gateway).
Offline option	Specifies how data shall be treated if the other network goes offline. Value: Meaning: Clear Data sent to the network is cleared Freeze Data sent to the network is frozen See also... - 2-6 "Error Handling"
Control/Status word	Value: Meaning: Enabled Enable the Control- and Status Words for this interface. Disabled Disable the Control- and Status Words for this interface. See also... - 2-2 "Status Word" - 2-4 "Control Word"
Live List[b]	Value: Meaning: Enabled Enable the Live List Disabled Disable the Live List See also... - 2-3 "Live List (Master Configurations Only)"

a. The terminology used for this setting may differ slightly between different networking systems.
b. This setting is not available on all network interfaces

Note: Additional network-specific settings may be available for certain interfaces.

Gateway System Configuration

Setting	Meaning
Reboot after disconnection[a]	Determines how the gateway behaves when the connection towards the transport provider is lost (i.e. terminated). Value: Meaning: Enabled Reboot gateway when the connection is lost Disabled Do not reboot the gateway when the connection is lost See also... - 3-6 "Operating Status Information"

a. This setting is only relevant when using the HMS Transport Provider functionality used by certain network configuration tools and software applications.

Configuration Upload/Download

Sometimes it is useful to be able to download a predefined configuration into the gateway. Note that this requires a terminal program with Y-modem capabilities.

```
--------------------------------------------------
Configuration upload/download
--------------------------------------------------


Download Instruction:

Step 1 - Type 'd' to start download
Step 2 - Type 'y' to go offline
Step 3 - Start Ymodem transfer (Send)
Step 4 - Download file 'config.cfg'
--------------------------------------------------
Upload Instruction:

Step 1 - Type 'u' to start upload
Step 2 - Start Ymodem transfer (Receive)
--------------------------------------------------
Start configuration Upload/Download? (U/D)
```
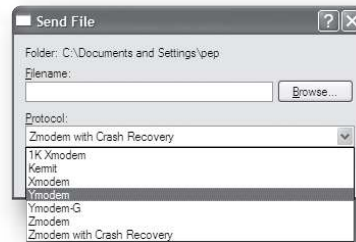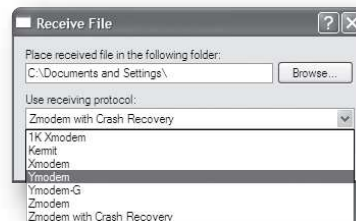
- **To download the configuration file to the gateway...**

    1. Press 'd'. The gateway is now waiting for the host terminal to send the configuration via Y-Modem.

    2. If prompted, press 'y' to allow the gateway to go offline on both networks.

    3. Select 'Send File...' in the 'Transfer' menu.

    4. Specify the file that shall be sent to the gateway.

    5. Select 'Y-Modem' in the 'Protocol'-list

    6. Click 'Send'. The specified configuration file will now be downloaded to the gateway. If necessary, the gateway will restart. Once restarted, the new settings will become active.

- **To upload a configuration file from the gateway...**

    7. Press 'y' <Enter>. The gateway is now waiting for the host terminal to receive the configuration via Y-Modem.

    8. Select 'Receive File...' in the 'Transfer' menu.

    9. Specify the destination path. The file will be saved as 'config.cfg'.

    10. Select 'Y-Modem' in the 'Use receiving protocol'-list

    11. Click 'Receive'. The gateway will now send its current configuration to the host terminal.

    12. The gateway will now restart.

Change Operation Mode (Master Configurations Only)

This menu is only available on master gateway configurations, and allows the current master operation mode to be specified manually.

```
--------------------------------------------------
 Change operation mode
--------------------------------------------------
 PROFIBUS Master (Upper)

 Operation mode (+/-):                        Stop
--------------------------------------------------
 Press ESC to continue
```

(Press <Esc> to return to the main menu).

See also...

- 2-2 "Status & Diagnostics" (2-4 "Control Word")
- Interface addendum for the on board master/scanner.