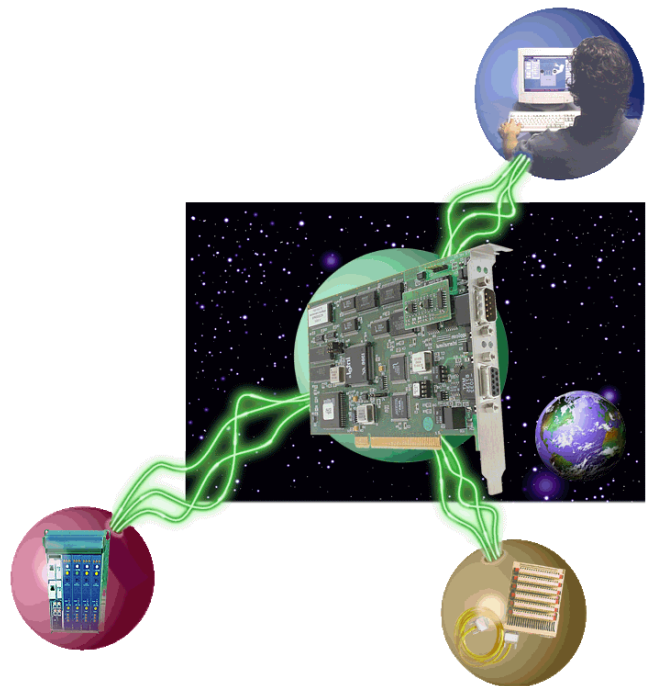


CommDTM Woodhead Profibus DPV1

Document Edition: 1.2

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Date: May 31, 2006

This document applies to the CommDTM Woodhead Profibus DPV1 product

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Table of contents

1	Preface	3
2	Overview	6
	2.1 The FDT Concept	7
	2.2 PROFIBUS.....	8
3	Installation	11
	3.1 Installing Hardware and Software	11
4	Functionalities	12
5	CommDTM Implementation Example	14
	5.1 Description	14
	5.2 Creating the Configuration in PACTware.....	14
	5.3 Updating Settings on the Master Station	16
	5.4 Updating the Device DTM Addresses.....	17
6	Commands supported	19
	6.1 Configuring the Master.....	19
	6.2 Updating the Device DTM Addresses.....	25
	6.3 Scanning the Network.....	26
	6.4 Putting the Configuration Online (Connect)	27
	6.5 List of Stations on the Network	28
	6.6 Assigning a Station's Physical Address.....	29
	6.7 Launching Online Help.....	30
	6.8 Using the Audit Trail Command.....	30
	6.9 Changing Expert Parameters	31
7	Troubleshooting	34

8	Error and Status Messages.....	36
8.1	Messages Indicating a PROFIBUS DPV1 Network Error.....	36
8.2	Messages Indicating an Online/Offline Mode Error	37
8.3	Messages Indicating a Timeout Error.....	37
8.4	Other Error Messages.....	37
8.5	Status.....	39
9	Warranty and Support	41
9.1	Warranty.....	41
9.2	Reference Documents	41
9.3	Technical Support.....	41
10	Index	43

1 Preface

Purpose of this Guide

This guide explains how to install, configure and use the CommDTM Woodhead Profibus DPV1.

The CommDTM is used in conjunction with a Woodhead communications card.

Conventions

This guide uses stylistic conventions, special terms, and special notation to help enhance your understanding.

Style

The following stylistic conventions are used throughout this guide:

Bold indicates key word

Terminology

The following special terms are used throughout this guide:

<i>Card</i>	the SST-PFB3-PCI interface card.
<i>DTM</i>	Device Type Manager. OLE software component.
<i>CommDTM</i>	OLE software component that interfaces with the network
<i>DTM container</i>	OLE software component that contains Device DTMs and CommDTMs
<i>FDT frame application</i>	See DTM container.
<i>Device DTM</i>	OLE software component that allows a PROFIBUS DPV1 device to be configured and diagnosed

Special Notation

The following special notations are used throughout this guide:



Warning

Warning messages alert the reader to situations where personal injury may result. Warnings are accompanied by the symbol shown, and precede the topic to which they refer.



Caution

Caution messages alert the reader to situations where device damage may result. Cautions are accompanied by the symbol shown, and precede the topic to which they refer.



Note

A note provides additional information, emphasizes a point, or gives a tip for easier operation. Notes are accompanied by the symbol shown, and follow the text to which they refer.

2 Overview

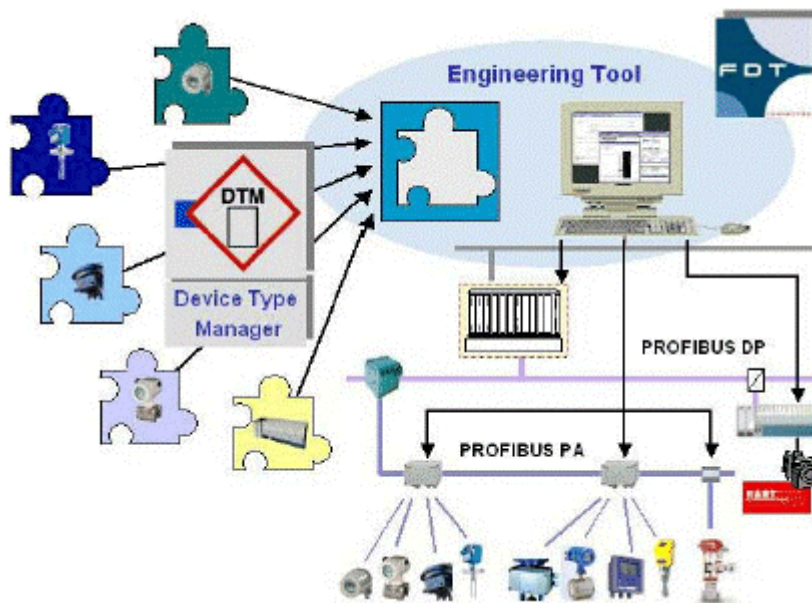
The CommDTM is an OLE software component that operates with a Woodhead communications card. The combined system allows you to configure and run diagnostics on a PROFIBUS DPV1 device (including PA).

2.1 The FDT Concept

The FDT (Field Device Tool) concept is used to configure and run diagnostics on the DPV1. It is an open concept, as each hardware manufacturer can implement their own graphics components. These components are known as **Device DTMs** (Device Type Managers).

Each DTM conforms to the FDT interface specification and can therefore be integrated within a single working environment, known as a **DTM Container** or **FDT Frame Application**.

The **CommDTM** is the OLE component that manages communication between DTMs and physical devices on the network. The Device DTM does not access the physical network directly. The CommDTM is able to use communications hardware, which is treated as a master on the fieldbus.



The CommDTM Woodhead Profibus DPV1 supports FDT specification Version 1.2 (PROFIBUS directive N° 2162).

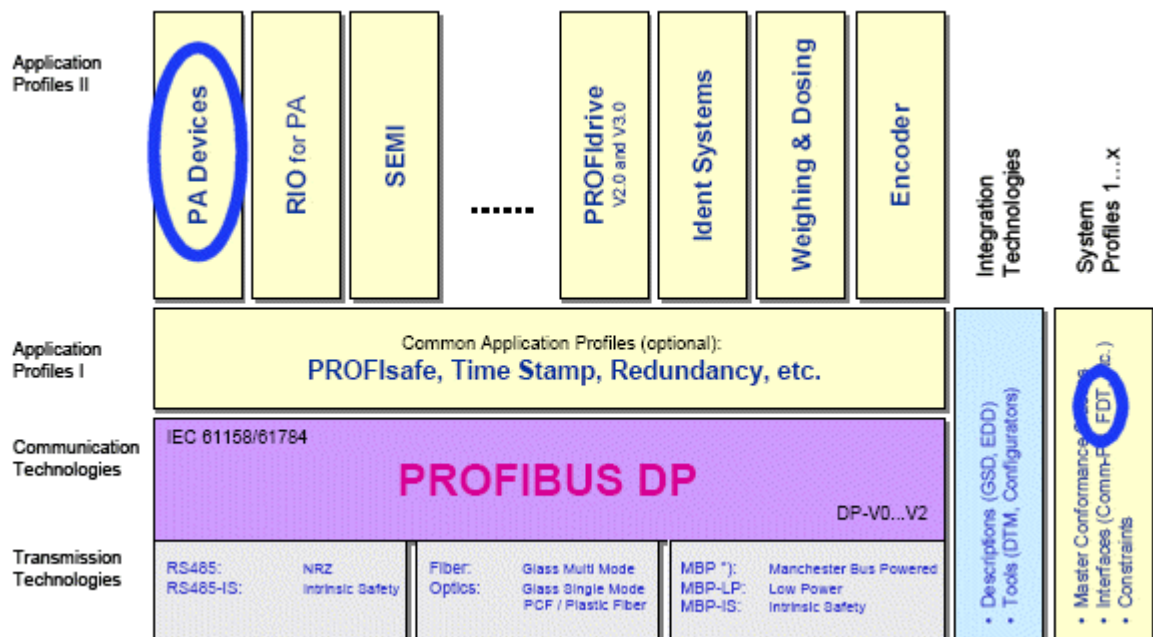
2.2 PROFIBUS

PROFIBUS is a communications system that meets the needs of a wide range of applications.

Originally geared towards communications, development efforts now focus on integration, engineering and, in particular, application profiles.

2.2.1 PROFIBUS DP

PROFIBUS DP (Decentralized Periphery) is a data exchange protocol that is divided into three progressive stages: DP-V0, DP-V1 and DP-V2. It is simple, fast, cyclic and deterministic between the bus master and its slaves.



2.2.2 PROFIBUS DP V1

PROFIBUS DP V1 transmits acyclic frames between master and slave. This enables configuration and standardization of the operating field devices, as well as alarm acknowledgment. This acyclic transmission works in parallel with cyclic communication, but at a lower priority.

The CommDTM supports only the DP-V1 extension (managing profiles based on DP-V0 is not possible).

2.2.3 PROFIBUS PA

Modern devices can execute all or part of the processes that were formerly centralized in the automated systems. The PA device profile defines the entire set of functionalities and parameters for different classes of process instruments that are involved in the data flow.

In particular, PROFIBUS PA relies on MBP-IS transmission and the DP protocol's DP-V1 extension.

2.2.4 Transmission methods

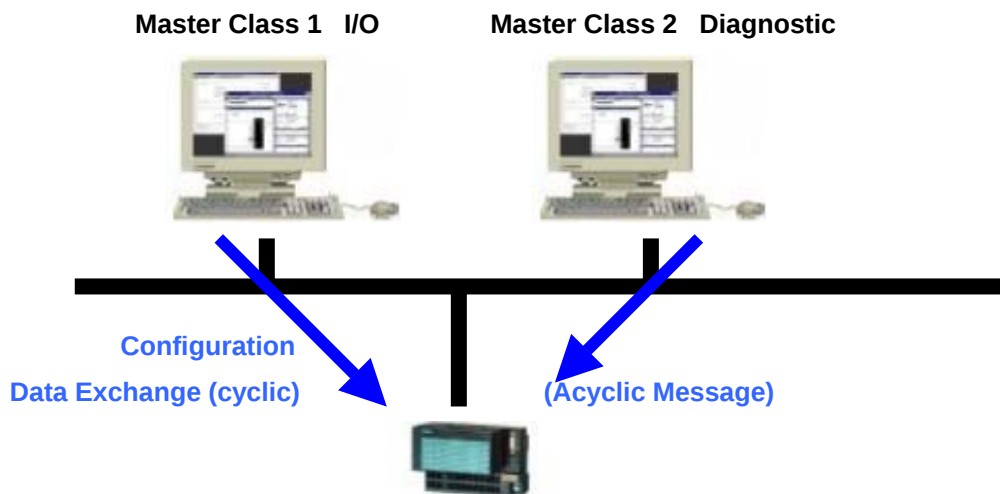
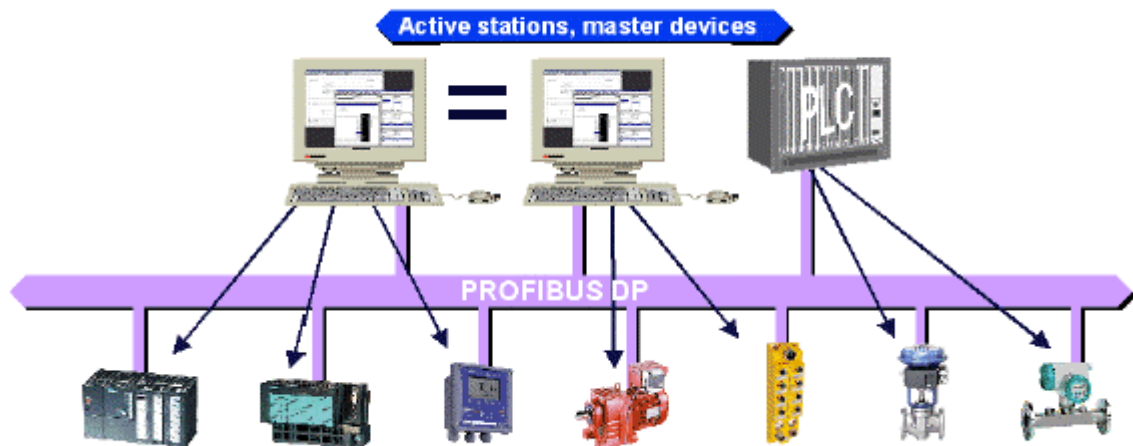
PROFIBUS can use the following transmission methods:

- RS485. This is the most frequently used method, and uses a shielded twisted pair cable. It allows data rates of up to 12 Mbps.
- RS485-IS. This is a 4-wire shielded twisted carrier that offers EEx i protection in an explosive zone. The baud rate varies from 9.6 to 1500 kbps.
- MBP-IS (Manchester Coded, Bus Powered). This uses a shielded twisted pair and offers EEx i protection in an explosive zone. The baud rate is fixed at 31.25 kbps.
- Optical fibre. This is suitable for environments with high-static noise or for long-distance transmission. The baud rate varies from 9.6 to 12,000 kbps.

2.2.5 Network configuration

A PROFIBUS DP network can have one or several master stations. In the case of a multi-master network configuration, all master station settings (such as baud rate) must be compatible.

The CommDTM uses the DPV1 services and the scanner as DPV1, master class 2.



3 Installation

3.1 Installing Hardware and Software

3.1.1 Card and Windows Version

The CommDTM Woodhead Profibus DPV1 requires a Woodhead **PFB3-PCI** card to be installed in your machine.

Windows versions NT4 SP6, Windows 2000 SP3 and XP SP1 are supported.

3.1.2 Installing the Card and Associated Software

To install the card and its associated software (drivers, card access library, etc.), refer to the documentation for the Woodhead **PFB3-PCI** card.

3.1.3 List of Installed Files

Filename	Location	Registration	Comment
DTM PFBA.dll	Installation directory	Yes	CommDTM
PFB3PRODUCT.ICO	Installation directory	No	Icon
DTM PFBA.pdf	Installation directory	No	Documentation
DTM PFBA.chm	Installation directory	No	Online help
pfberr32.dll	System32	No	Error documentation
pfbman32.dll	System32	No	Card access library
isFDTDIgObjects2.dll	System32	Yes	Library
_isFDTObjects.dll	System32	Yes	Library
is FDT Template2.dll	System32	Yes	Library
FDT120.dll	System32	Yes	Library
*.xml	"installation directory" \\XmlSchemas	No	XML schemas

4 Functionalities

The main task of the CommDTM Woodhead Profibus DPV1 is to manage communication between Device DTMs and physical devices on the network, according to the FDT specification. These devices can be DPV1 or PA.

The CommDTM can be integrated in all FDT frames that conform to the standard (e.g., PACTware).

Configuring Master Parameters

The CommDTM uses the PROFIBUS DPV1 Master Class 2 services. The network can be single-master (with the CommDTM as the only master on the network) or multi-master.

The master's parameters are configured graphically, and can be reset to their default settings at any time. Each parameter is documented in the online help files.

In the case of a multi-master network, the master's parameters (such as baud rate) must be compatible with those of other masters

Reading/Writing Device Parameters

The CommDTM uses the following DPV1 services: CONNECT, DISCONNECT, READ, WRITE and ABORT.

Polling Network Stations

The CommDTM enables two methods of network polling:

- detecting and identifying the device according to the FDT specification,
- displaying a list of the active and passive stations that are present on the network.

Changing a Device's Physical Address

For physical devices that support this functionality, the CommDTM allows you to change the device address.

Changing the Address of Device DTMs from the CommDTM

You can assign addresses to all Device DTMs from a single dialog box. This functionality is useful because there's no standardized method for inputting addresses in the DTM.

Error Handling

CommDTM errors are displayed in adherence with the FDT specification. These errors are conveyed as logical messages that make it easier for the user to perform diagnostics. The error messages can either be displayed or not displayed, via a dialog box parameter in the CommDTM properties.

The CommDTM supports the optional IDtmAuditTrailEvents interface, which allows you to track modifications with regard to:

- Settings on the master
- Physical addresses changes
- Device DTM addresses.

Adaptation to Different Devices

The Expert parameters dialog box allows you to configure Retry Number and Wait between Retries in the DPV1 communication for some devices.

Log File

The Expert parameters dialog box allows you to create a log file of all the errors and communication between the devices and the PROFIBUS Network.

Managing User Levels

The CommDTM manages the user levels (administrator, maintenance, and so on) in accordance with the FDT specification.

Action	Observer	Operator	Maintenance	Planning Eng.	Admin.
add CommDTM				x	x
add device DTMs under CommDTM				x	x
Delete device DTMs				x	x
Modify master configuration				x	x
Modify device addresses on network				x	x
Modify device DTM addresses				x	x
Switch in online mode	x	x	x	x	x
Switch in offline mode	x	x	x	x	x
Scan stations on network	x	x	x	x	x
DPV1 request from Device DTM to physical device	x	x	x	x	x

5 CommDTM Implementation Example

5.1 Description

The aim of this example is to implement the CommDTM on a single-master network together with several devices.

Prerequisites for this example:

- DTM container PACTware is installed (this can be obtained for free on the website <http://www.pactware.com> or <http://www.pactware.com/english/PACTware/swdownload.htm>).
- Device DTMs that correspond to the devices are installed on the machine.
- CommDTM and the PFB3 card are installed.

5.2 Creating the Configuration in PACTware

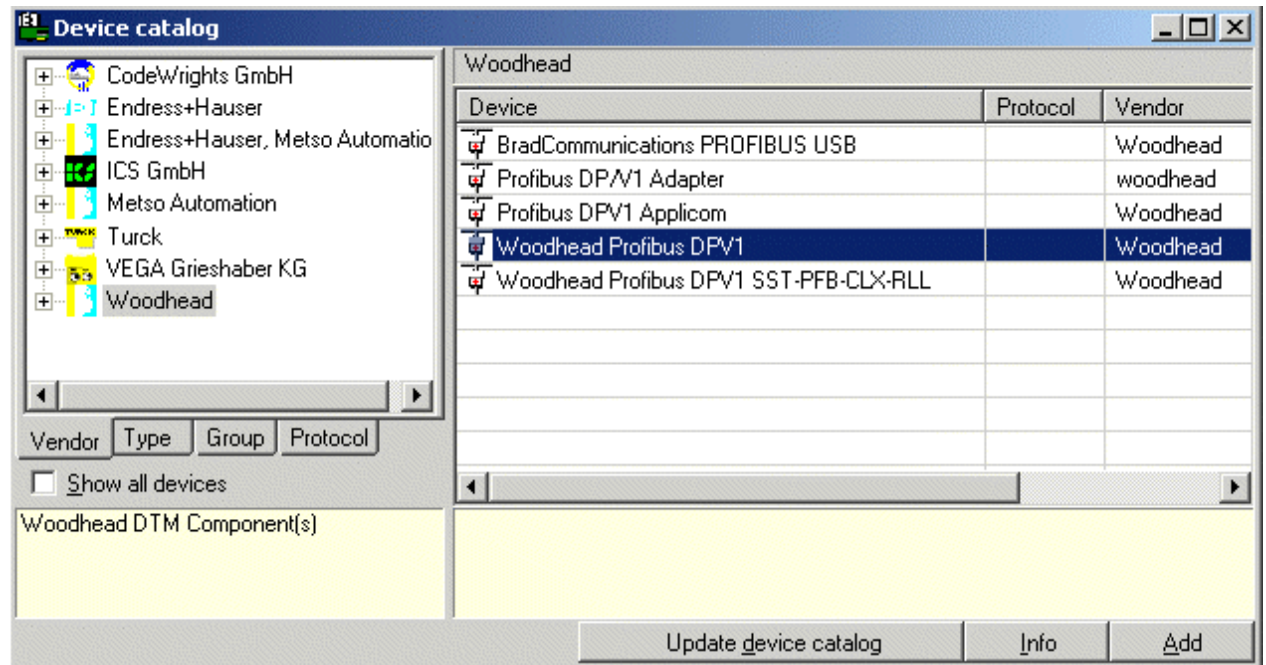
- Logging into PACTware.



Log in as "Administrator" or "Planning engineer". The default password is "manager".

- Updating the DTM Catalog

1. Go to **View > Device catalog**. The DTM catalog is displayed.
2. Click the **Update device catalog** button. The DTM is displayed in the catalog:

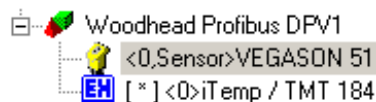


- Adding DTMs to the Current Configuration

1. To add the CommDTM to the current configuration, go to **Device > Add Device**.



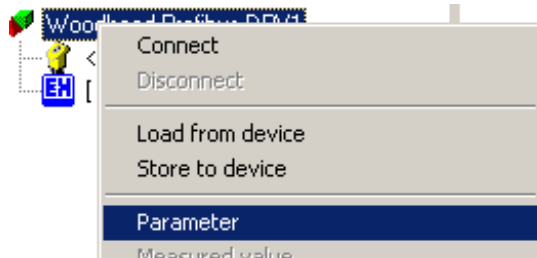
2. Add the Device DTMs that correspond to the device on the network.



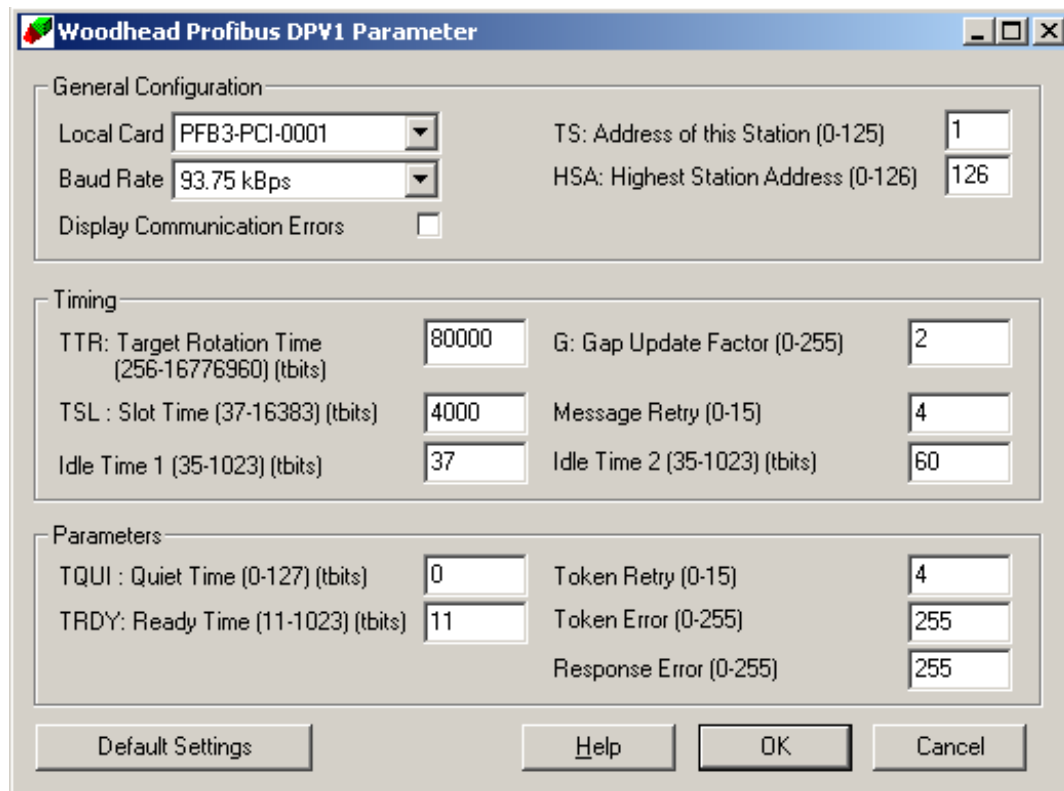
5.3 Updating Settings on the Master Station

By default, the master address is 1. If this address is already being used on the network, it will need to be changed.

To access them, right-click on the master and select **Parameter**:



The master configuration box is displayed. Change the address of the master station and any other parameters as necessary.



General Configuration	
Local Card	PFB3-PCI-0001
Baud Rate	93.75 kbps
Display Communication Errors	☐
TS: Address of this Station (0-125)	1
HSA: Highest Station Address (0-126)	126

Timing	
TTR: Target Rotation Time (256-16776960) (tbits)	80000
TSL: Slot Time (37-16383) (tbits)	4000
Idle Time 1 (35-1023) (tbits)	37
G: Gap Update Factor (0-255)	2
Message Retry (0-15)	4
Idle Time 2 (35-1023) (tbits)	60

Parameters	
TQUI: Quiet Time (0-127) (tbits)	0
TRDY: Ready Time (11-1023) (tbits)	11
Token Retry (0-15)	4
Token Error (0-255)	255
Response Error (0-255)	255

Buttons: Default Settings, Help, OK, Cancel



Caution

In the case of a multi-master network, the master's parameters (such as baud rate) must be compatible with those of other masters.

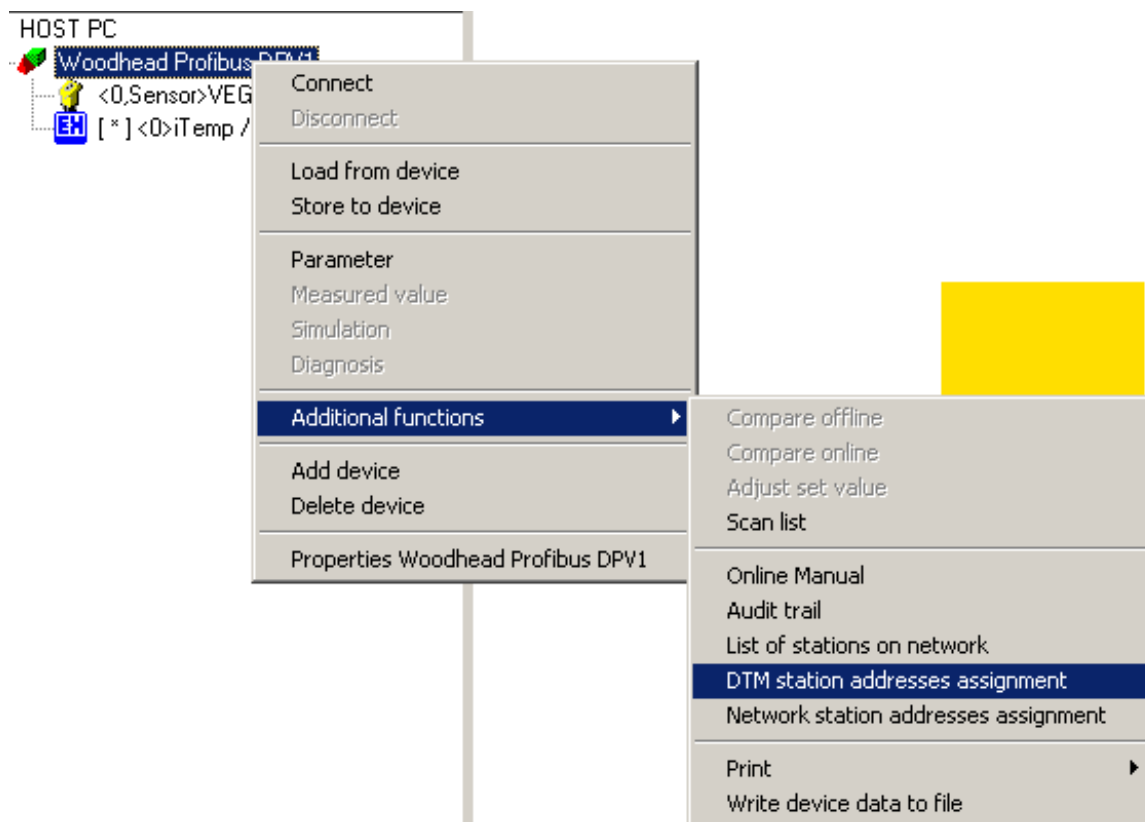
5.4 Updating the Device DTM Addresses

Device DTMs are connected to physical device addresses, which must be assigned. You can do this via one of the following two methods:

- The graphical interface on the Device DTMs. This is specific to each Device DTM.
- The “DTM station addresses assignment” command on the CommDTM

In the latter case:

Right-click on the master and select **Additional functions > DTM station addresses assignment**.



The Station Addresses Assignment dialog is displayed. Change the Device DTM addresses as appropriate.

Woodhead Profibus DPV1 DTM station addresses assignment

Address	Device Name	Vendor	Type	Version
2	iTemp / TMT 184 / PA / V1.0...1.1	Endress+Hauser		1.0.1
3	VEGASON 51 Profibus	VEGA Grieshaber KG	Sensor	4.50.00

Address (0-126)

Station address 2 successfully modified.
 Station address 3 successfully modified.
 No conflict between DTM station addresses.

The configuration is complete. You can now put the configuration online by using the **connect PACTware** command.

6 Commands supported

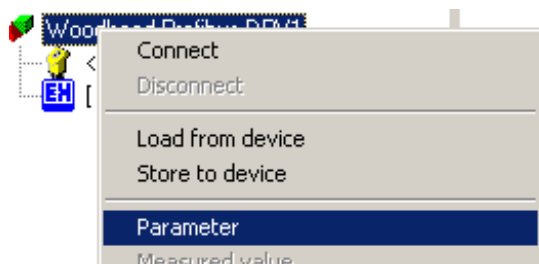


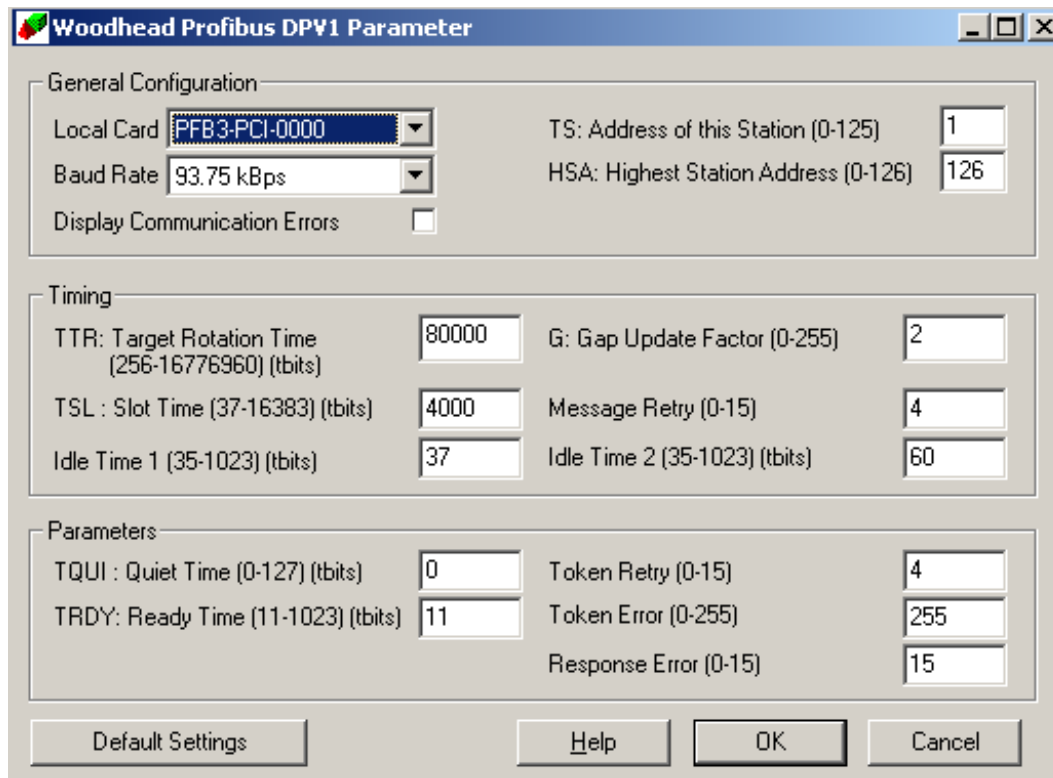
Note

The menu screen captures are taken using PACTware and may differ with other Frame FDTs.

6.1 Configuring the Master

To open the dialog box, right-click on the master and select **Parameter**.





Woodhead Profibus DPV1 Parameter

General Configuration

Local Card: PFB3-PCI-0000
 Baud Rate: 93.75 kbps
 Display Communication Errors: ☐

TS: Address of this Station (0-125): 1
 HSA: Highest Station Address (0-126): 126

Timing

TTR: Target Rotation Time (256-16776960) (tbits): 80000
 TSL: Slot Time (37-16383) (tbits): 4000
 Idle Time 1 (35-1023) (tbits): 37
 G: Gap Update Factor (0-255): 2
 Message Retry (0-15): 4
 Idle Time 2 (35-1023) (tbits): 60

Parameters

TQUI: Quiet Time (0-127) (tbits): 0
 TRDY: Ready Time (11-1023) (tbits): 11
 Token Retry (0-15): 4
 Token Error (0-255): 255
 Response Error (0-15): 15

Default Settings Help OK Cancel



Notes

- The parameters can be modified using the “administrator” and “planning engineer” user levels. Under the other levels, the parameters are read-only.
- If the CommDTM is online (connected to the device), the parameters are read-only.

Local Card

Card name. The list contains all the cards detected in the PC.

Baud Rate

This is the baud rate of the PROFIBUS network.

Value: 9.6 kbps to 12 Mkbps, 93.75 kbps by default.

Display Communication Errors

This allows you to determine whether or not to display communication error messages.

TS: Address of this Station

This is the address of the master on the DP network.

Value: 0-125, 1 by default

HSA: Highest Station Address

This is the highest allowed station address for any active station on the network. The highest station affects how much time is spent soliciting for new nodes.

Value: 0-126, 126 by default

TTR: Token Rotation Time

This is the maximum target token rotation time for the network, expressed in Tbits and time.

Value: 256-16776960 Tbits.

The default value depends on the baud rate:

Baud Rate	TTR (Tbits)
9.6 kbps	1000
19.2 kbps	1000
31.25 kbps	10000
45K45 kbps	10000
93.75 kbps	80000
187.5 kbps	10000
500 kbps	10000
750 kbps	10000
1.5 Mbps	10000
3 Mbps	100000
6 Mbps	100000
12 Mbps	100000

TSL : Slot Time

This is the amount of time the master waits for a reply to a message.

Value: 37-16383 Tbits.

The default value depends on the baud rate:

Baud Rate	TSL (Tbits)
9.6 kbps	100
19.2 kbps	100
31.25 kbps	100
45K45 kbps	500
93.75 kbps	4000
187.5 kbps	100
500 kbps	200
750 kbps	200
1.5 Mbps	300
3 Mbps	400
6 Mbps	500
12 Mbps	750

Idle Time 1

This is the amount of time the master waits after it receives a reply or an acknowledge.

Value: 35-1023 Tbits.

The default value depends on the baud rate:

Baud Rate	Idle Time 1 (Tbits)
9.6 kbps	37
19.2 kbps	37
31.25 kbps	37
45K45 kbps	37
93.75 kbps	37
187.5 kbps	37
500 kbps	37
750 kbps	37
1.5 Mbps	37
3 Mbps	45
6 Mbps	55
12 Mbps	75

G: Gap Update Factor

This is the number of token rotations between solicits for a new node.

Value: 0-255

Default value: 2

Message Retry

This is the maximum number of times the master retries a message when the slot time expires.

Value: 0-15

Default value: 4

Idle Time 2

This is the amount of time the master waits after sending a message before it sends another one.

Value: 35-1023 Tbits.

The default value depends on the baud rate:

Baud Rate	Idle Time 2 (Tbits)
9.6 kbps	60
19.2 kbps	60
31.25 kbps	60
45K45 kbps	60
93.75 kbps	60
187.5 kbps	60
500 kbps	100
750 kbps	100
1.5 Mbps	150
3 Mbps	250
6 Mbps	450
12 Mbps	550

TQUI : Quiet Time

This is the number of bits the master waits after it turns on its transmitter, before it begins to send data.

Value: 0-127 Tbits

The default value depends on the baud rate:

Baud Rate	TQUI (Tbits)
9.6 kbps	0
19.2 kbps	0
31.25 kbps	0
45K45 kbps	0
93.75 kbps	0
187.5 kbps	0
500 kbps	0
750 kbps	0
1.5 Mbps	0
3 Mbps	3
6 Mbps	6
12 Mbps	9

TRDY: Ready Time

This is the number of bits the master waits before sending an ACK response, after sending a command.

Value: 11-1023 Tbits

Default value: 11 Tbits

Token Retry

This is the number of times the master retries passing the token before deciding that the station is not present.

Value: 0-15

Default value: 4

Token Error

This is the maximum number of errors in 256 token cycles.

Value: 0-255

Default value: 255

Response Error

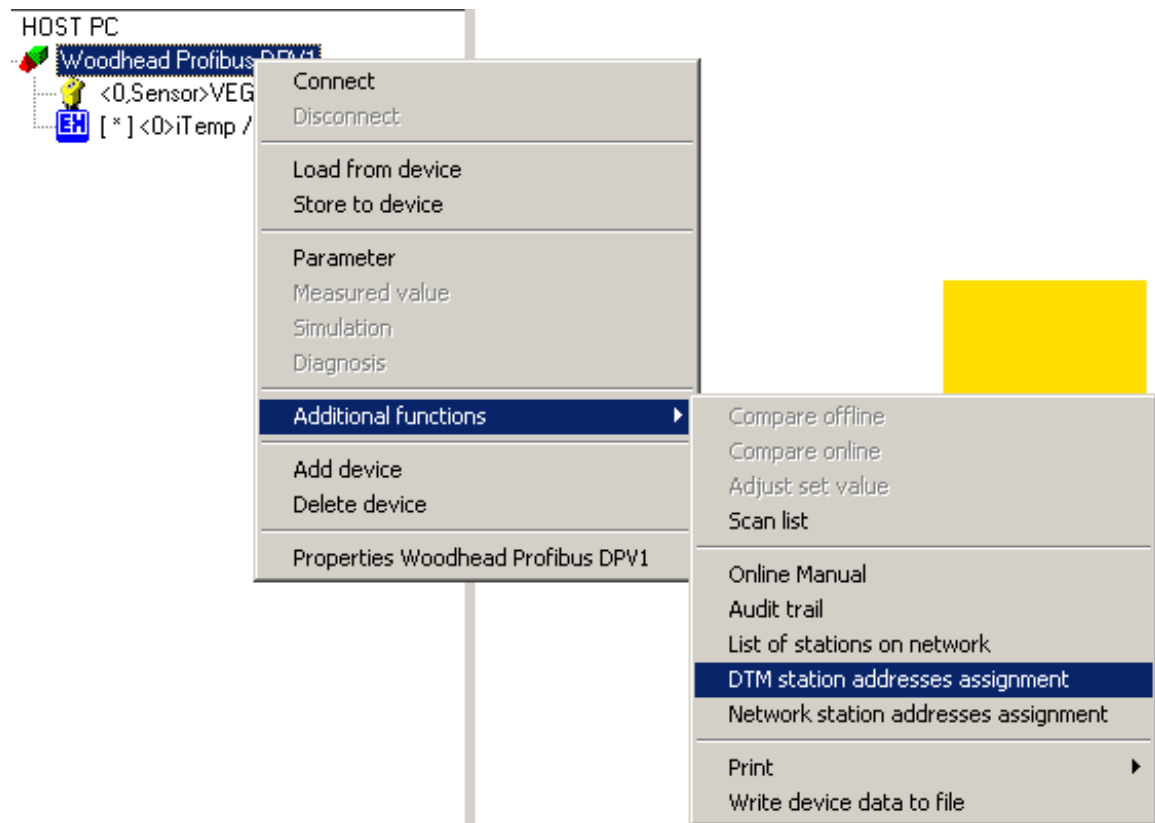
This is the maximum number of message failures in 16 successive messages.

Value: 0-15

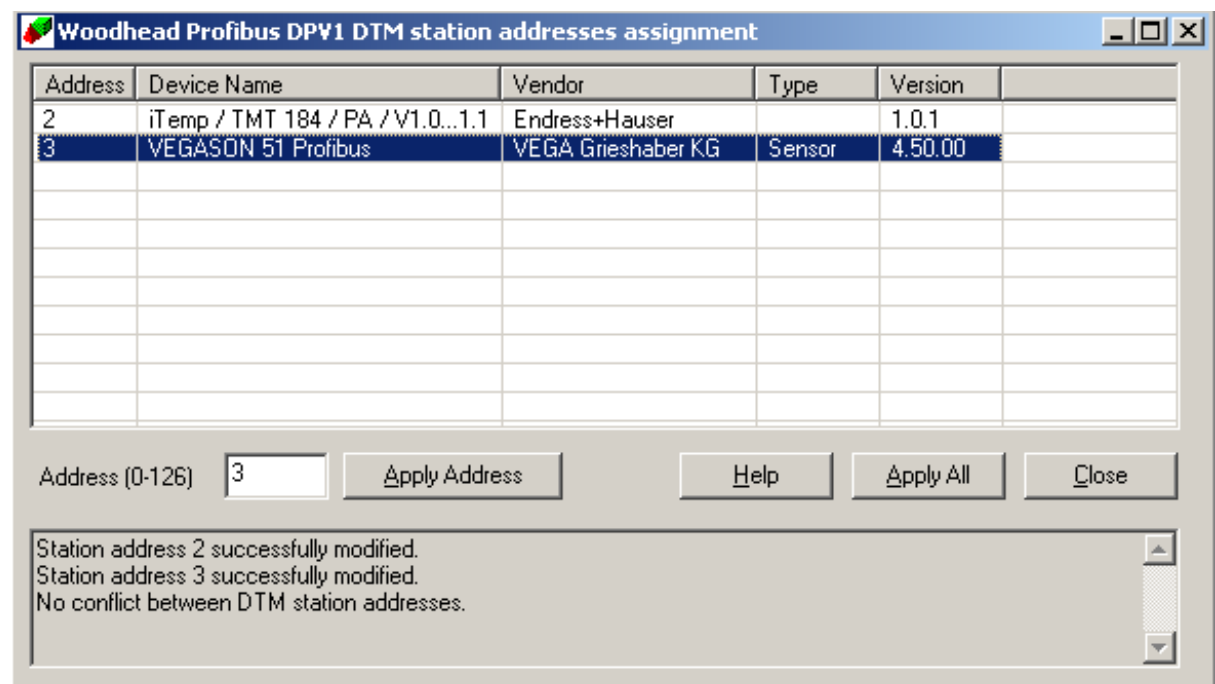
Default value: 15

6.2 Updating the Device DTM Addresses

To open the dialog box, go to:



The following graphical interface is then used to change the Device DTM addresses.



The list contains the configured Device DTMs. The **Apply Address** button is used to change the address of the Device DTM selected in the list. The **Apply All** button is used to change the address of all the Device DTMs.

The messages shown at the bottom of the dialog box indicate the results of an address assignment and of any address conflicts between the different DTMs.



Caution

The address displayed here is Device DTM address, but it is not related to the physical address on the network. Changing the address in this dialog box will not change the device's physical address on the network.

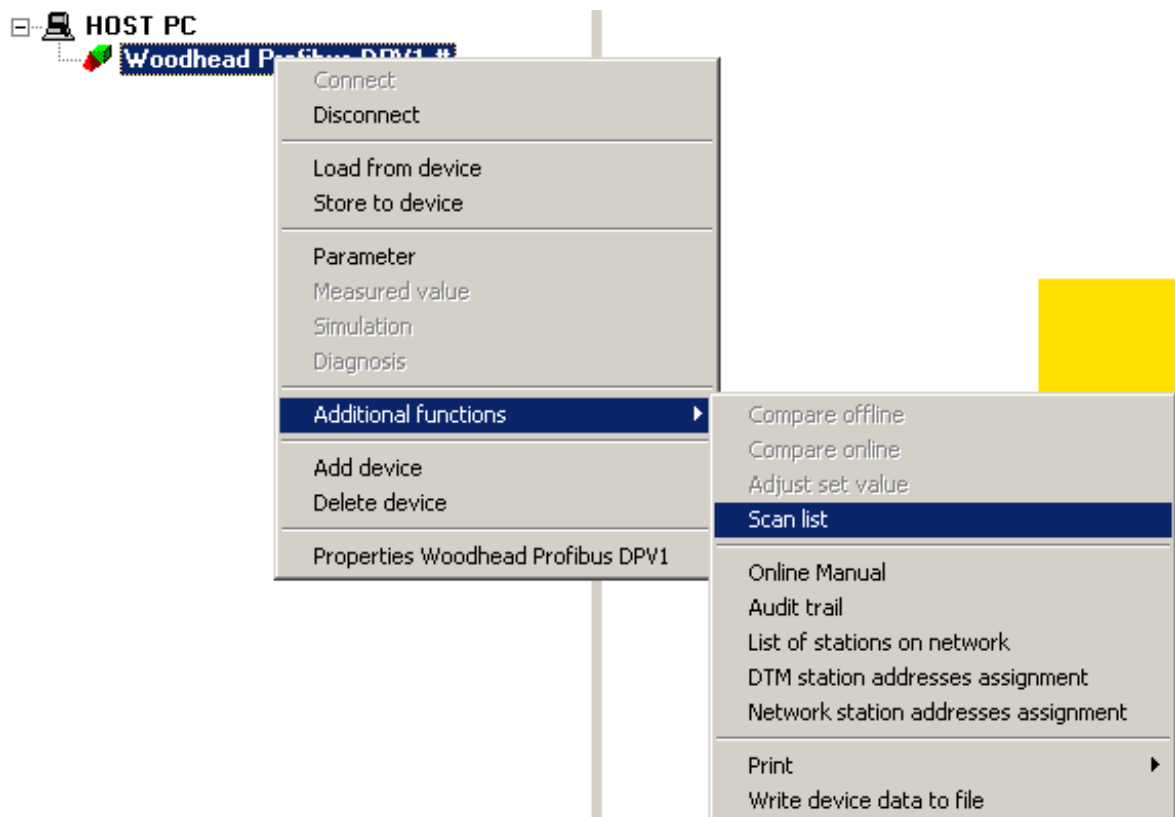


Notes

- The addresses can be modified using the “administrator” and “planning engineer” user levels.
- If the CommDTM is online (connected to the device), the device DTM address cannot be modified.

6.3 Scanning the Network

To search for stations on the network, do the following:

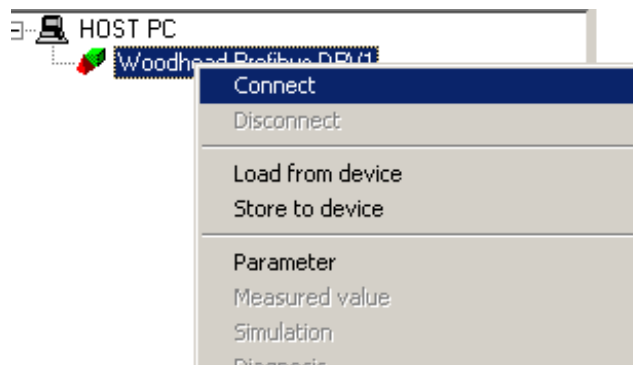




Note

The CommDTM must be put online using the Connect command (see the next chapter) before performing a network scan.

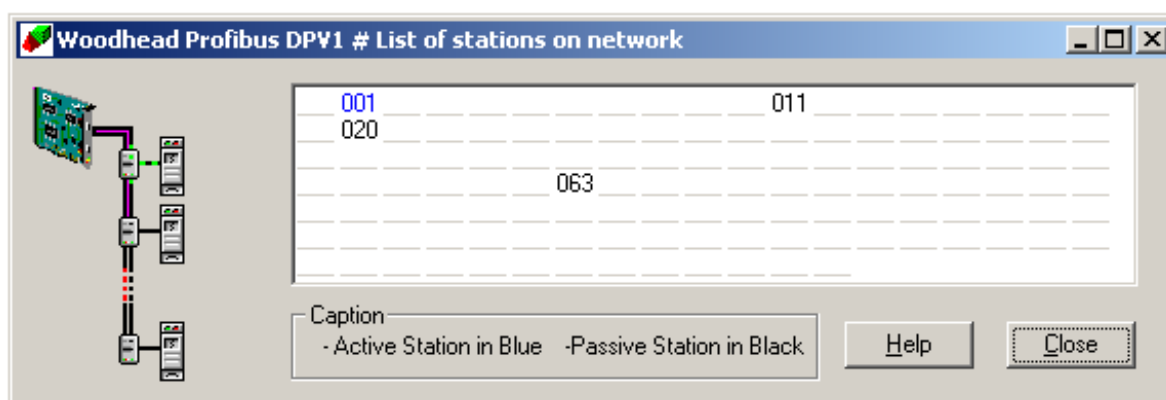
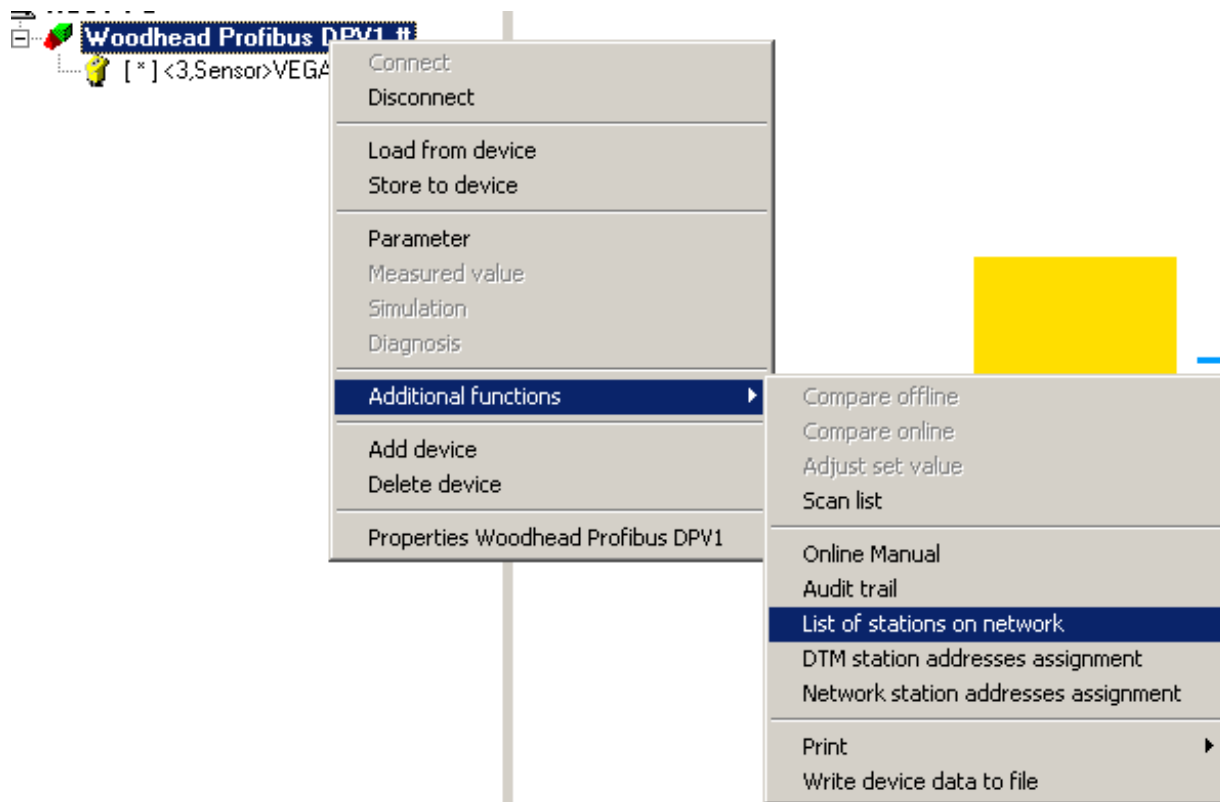
6.4 Putting the Configuration Online (Connect)



This command puts the CommDTM online. Within the same configuration, two CommDTMs cannot use the same communication card.

6.5 List of Stations on the Network

To open the dialog box, do the following:



This dialog box displays the numbers of the stations present on the network.

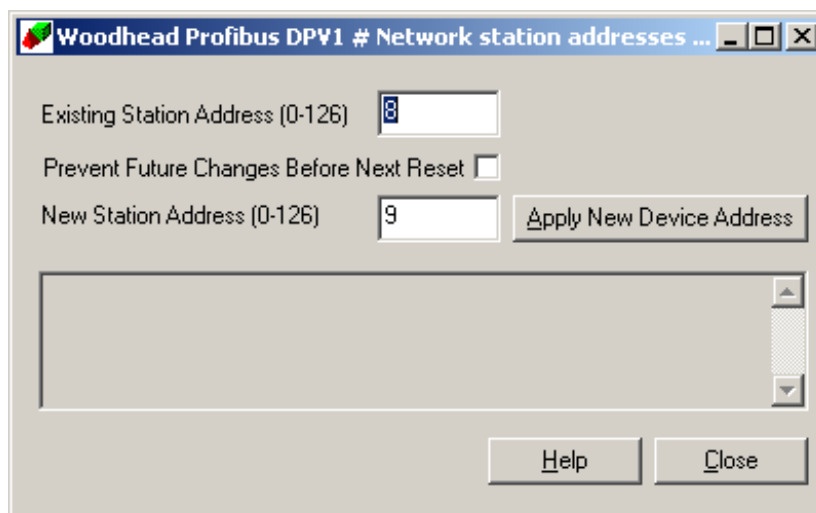
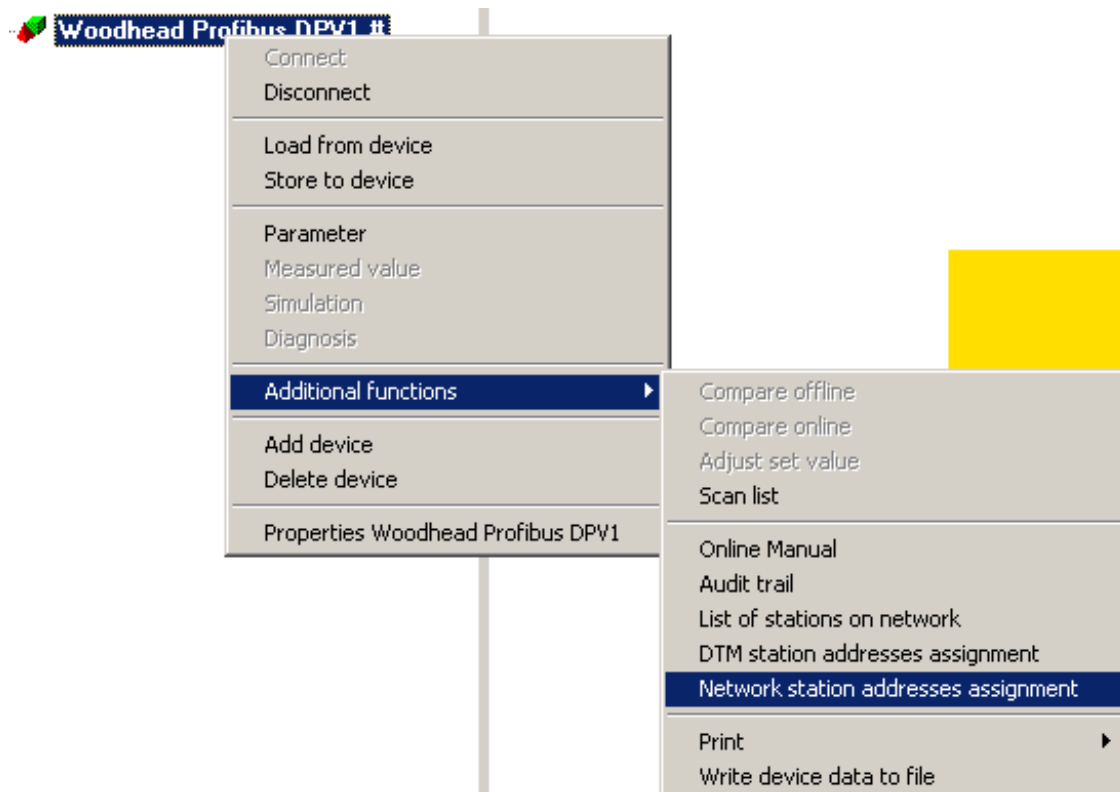


Note

The CommDTM must be online before this can be done.

6.6 Assigning a Station's Physical Address

To open the dialog box, do the following:



This dialog box is used to change a device's physical address, if the device supports this functionality.

If the **Prevent Future Changes Before Next Reset** checkbox is selected, the device address cannot be changed before the next device reset.



Notes

- The CommDTM must be online before this can be done.
- The address can only be modified using the “administrator” and “planning engineer” user levels.

6.7 Launching Online Help

The **Online Help manual** command is used to open the online help manual.

6.8 Using the Audit Trail Command

This command is used to log any modifications made to the master parameters, Device DTM addresses and physical stations if the address change was made using a CommDTM graphical interface.

These messages are managed by the DTM container.

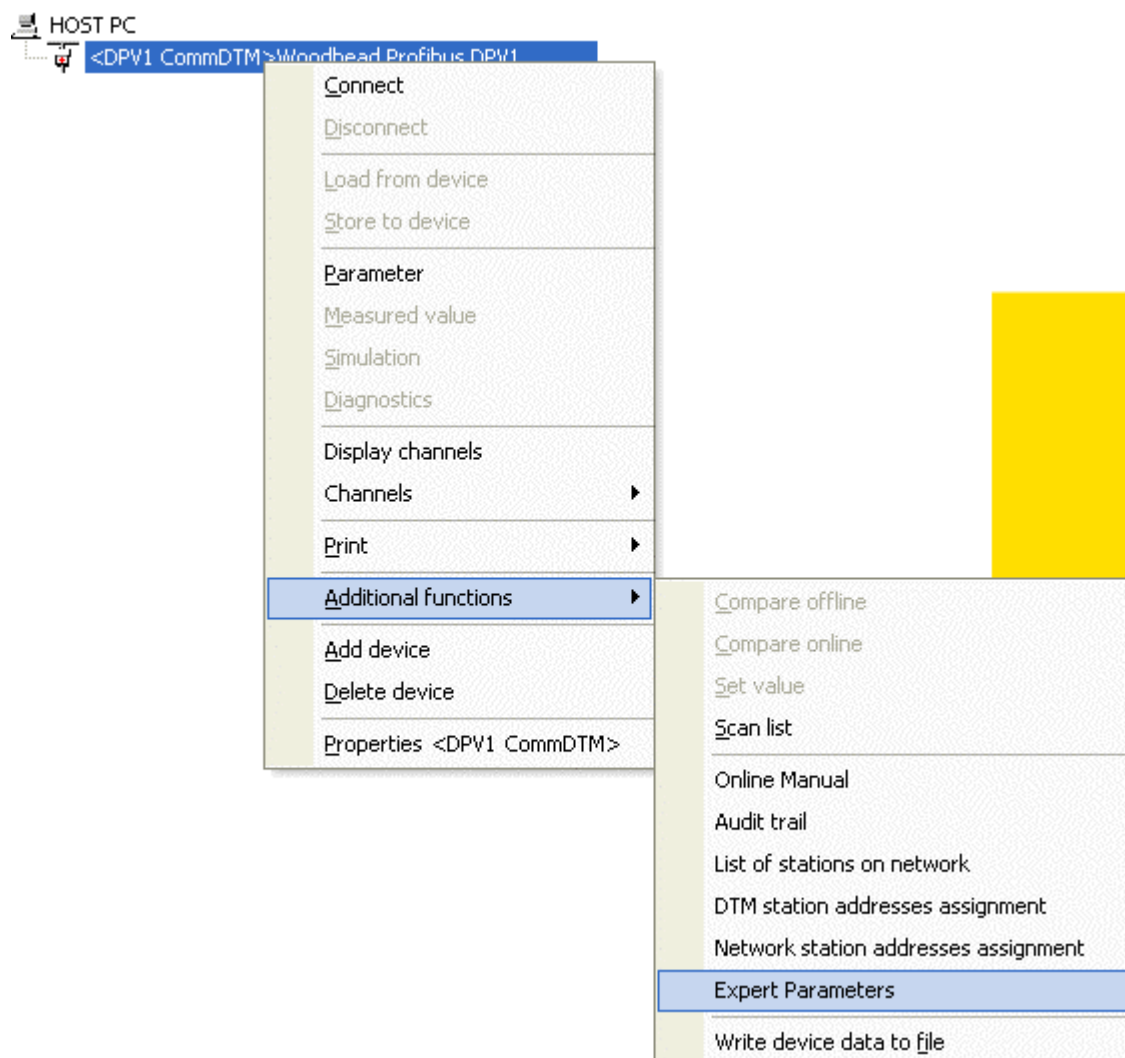


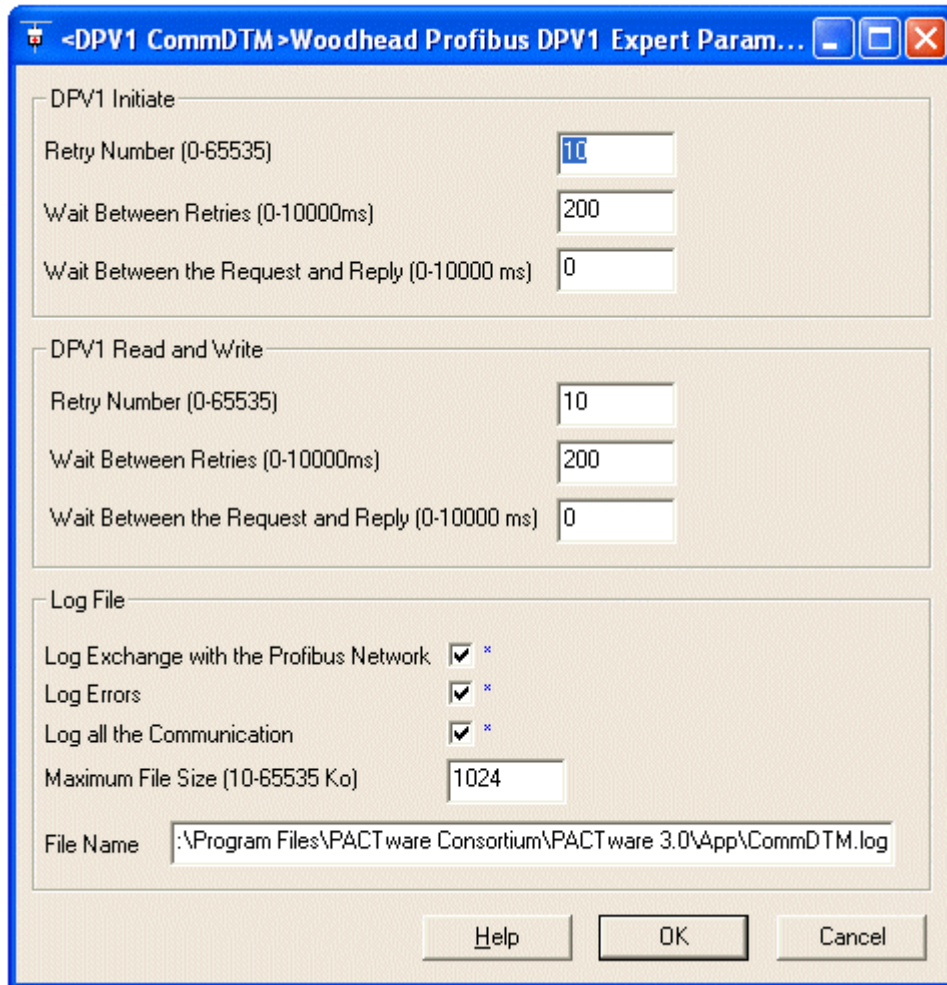
Note

This command uses an optional interface in the FDT specification, which certain DTM containers have not implemented.

6.9 Changing Expert Parameters

To open the dialog box, do the following:





<DPV1 CommDTM>Woodhead Profibus DPV1 Expert Param...

DPV1 Initiate

Retry Number (0-65535)

Wait Between Retries (0-10000ms)

Wait Between the Request and Reply (0-10000 ms)

DPV1 Read and Write

Retry Number (0-65535)

Wait Between Retries (0-10000ms)

Wait Between the Request and Reply (0-10000 ms)

Log File

Log Exchange with the Profibus Network ☒ *

Log Errors ☒ *

Log all the Communication ☒ *

Maximum File Size (10-65535 Ko)

File Name



Notes

- The parameters can be modified using the “administrator” and “planning engineer” user levels. Under the other levels, the parameters are read-only.
- If the CommDTM is online (connected to the device), the changed parameters are read-only.

Retry Number

This is the number of times the request is made again if it is not successful before the CommDTM returns an error. Value: 0-65535, 10 by default

Wait Between Retries

This is the amount of wait time between request retries. Value: 0-10000 milliseconds, 200 milliseconds by default

Wait Between the Request and Reply

This is the amount of wait between the request and reply. Value: 0-10000 milliseconds, 0 milliseconds by default

Log File

The CommDTM can generate a text file that logs the errors or all the communication between the devices and the PROFIBUS Network. By default, this file is not generated.

Log Exchange with the Profibus Network

If checked, the CommDTM generates the log file. By default, it is not checked (the log file is not generated).

Log Errors

If checked, the log file lists the errors that occurred between the device and the CommDTM. By default, it is not checked.

Log all the Communication

If checked, the log file contains all the communication occurred between the device and the CommDTM. By default, it is not checked.

Maximum File Size

This is the maximum file size of the log file. When the log file reach the maximum size, the beginning of the file is deleted. The CommDTM adds a string at the end of the log file. Value: 10-65535, 10 Ko by default.

7 Troubleshooting

Issue	Suggestion
The CommDTM is not displayed in the container's DTM catalog	The list of DTMs in the DTM container may not be up to date. This list must be regenerated.
The CommDTM is not displayed in the container's DTM catalog, even after the list has been regenerated	The CommDTM is not correctly entered in the registry. Uninstall the CommDTM, reboot the machine and reinstall the CommDTM. If the problem persists, restart the procedure on a different computer.
An error with a hexadecimal status code is displayed when I place the CommDTM online	• Check in the master parameters that there is actually a card name in the "Local Card" parameter. If there is not, this means that the card has not been correctly detected by the machine. Refer to the installation help manual for the card. • If the card name is present in the master parameters: ✓ check that there are no other applications running that use the card. ✓ check that the card is correctly seated in the PC. ✓ restart the PC to reset the card

Issue	Suggestion
An error is displayed when I use a Device DTM online	This is a network communication error. • Check the Device DTM's station number • Check that the network is working correctly. The green LED on the card should be lit. • Check that there is no fault on the device • Check that the master configuration settings apply to your network (baud rate, timing, etc.). • In the Expert Parameters dialog box, increase the <i>Retry Number</i>, <i>Wait Between Retries</i> and <i>Wait Between the Request and Reply</i> parameters.

8 Error and Status Messages

8.1 Messages Indicating a PROFIBUS DPV1 Network Error

DPV1 invalid connection reference.
DPV1 not initialized.
DPV1 already initialized.
DPV1 no more FDL blocks available.
DPV1 invalid slave response.
DPV1 slave not ready.
DPV1 invalid subaddress parameter.
DPV1 Class 2 connection uninitialized.
DPV1 invalid slave reply.
DPV1 invalid number of block request.
DPV1 no free block.
DPV1 invalid length.
DPV1 invalid remote address.
DPV1 FDL error.
DPV1 error.

Possible Fixes:

- Check the Device DTM's station number
- Check that the network is working correctly.
- Check that there is no fault on the device
- Check that the master configuration settings apply to your network (baud rate, timing, and so on).
- In the Expert Parameters dialog box, increase the *Retry Number*, *Wait Between Retries* and *Wait Between the Request and Reply* parameters.

8.2 Messages Indicating an Online/Offline Mode Error

Acknowledge OFFLINE error (ONLINE errors cannot be acked).

Card is in error, status contains error code.

Card is ONLINE ready to take OFFLINE command.

Card is OFFLINE ready to take commands.

Card should reinitialize memory and all parameters. Card should now go OFFLINE, or abort config.

Card should now go ONLINE.

Fatal Error: Network error, card taken OFFLINE!

Fatal Error: Card cannot go OFFLINE!

Command cannot be executed while the card is not OFFLINE!

Command cannot be executed while the card is not ONLINE!

Possible Fixes:

- Switch the configuration to offline mode then to online mode
- Check that the Woodhead card is only being used by one application at a time

8.3 Messages Indicating a Timeout Error

Timeout updating passive stations!

Message reply timeout!

Timeout executing command!

Possible Fixes:

- Check that the network is working correctly
- Check that there is no fault on the device
- Check that the master configuration settings apply to your network (baud rate, timing, etc.).
- Test the communication between the card and the device, using the test utility

8.4 Other Error Messages

Shared heap allocation failed!

Heap allocation failed!

Fatal Error: Out of APBS!

Fatal Error: Configuration internal error!

Not enough room in copy table!

Layer 2 Message invalid maximum length!

Out of master extension memory!

Configuration invalid parameter or check data length!
Invalid Maximum Diagnostic length (max. 244)!
No more resources available while configuring the master!
Fatal Error: Command Configure Shared RAM failed!
Fatal Error: Command Copy Master Configuration failed!
Invalid Command (not supported)!
Invalid Card Handle Pointer in function PFB_OpenCard!
Invalid Version Pointer in function PFB_Version!
Invalid Buffer Pointer in function PFB_Version!
General failure!
Timeout Waiting for Module diagnostics, or module failure!
Timeout Waiting for Alive Signal from BOOT Program!
PCI Card does not support port addressing!
5136-PFB Card CPU is not running, connection to the card must be reopened with reload the module flag!
Card access timeout! (unable to gain access to global card semaphore)
Card not detected at specified address or failed to start!
Card not responding to start!
SST firmware module not loaded to card or not found!
Memory conflict encountered!
Cannot find hardware for specified card name. Please verify hardware resource configuration. (IO, memory conflicts) (Windows NT: SSTechDrv must be started).
Unable to retrieve configuration information from registry (invalid card name)!
Card is overlapped with another card which does not support overlap mode!
Card is already opened with hardware control access by another application or card has not been opened with hardware control flag and is trying write to port space!
Card is already opened with application IRQ access or Interrupt Level is not selected in Direct Link card configuration!
Card is already opened with card IRQ access by another application!Access denied.
Card is already used with exclusive write access or the application has no write access permission!
Invalid CardHandle! (card connection lost, or CardHandle corruptedNo more connections to the driver available! (maximum 16 applications access)
General program failure! (i.e. kernel driver failed, Operating System not supported, registry access error)
Driver is not loaded, you must load SSPFB32.DLL!
SSPFB32.DLL driver is invalid!
SSPFB32.DLL driver is not found!
SSPFB32.DLL driver is already loaded!

Possible Fixes:

- Check that the Woodhead card is only being used by one application at a time
- Reinitialise the card by restarting the machine
- Uninstall the Woodhead product and then reinstall it

8.5 Status

status (hexadecimal)	Description
2000 0000	Driver loaded
2000 0001	Driver not found
2000 0002	Invalid driver
2000 0003	Driver not loaded
2000 0100	General failure
2000 0101	CardHandle not available
2000 0102	Invalid CardHandle
2000 0103	Write access denied (sharing violation), card must be open with SS_WRITE flag
2000 0104	Card Interrupt access denied (sharing violation)
2000 0105	Application Interrupt access denied (sharing violation)
2000 0106	Hardware Control access denied (sharing violation), card is already opened with SS_HCONTROL flag
2000 0107	Overlap conflict
2000 0108	Configuration not found (invalid CardName)
2000 0109	Card not found (incorrect hardware configuration)
2000 010b	Invalid / damaged application module
2000 010d	Card diagnostic failure
2000 010e	Invalid Offset
2000 0114	Invalid pointer
2000 0115	Invalid interrupt level
2000 0116	Invalid I/O address
2000 0117	Invalid I/O length
2000 0118	Invalid memory address
2000 0119	Invalid memory length
2000 011a	Card access time-out
2000 011b	Driver access denied
2000 011d	Module load request denied
2000 011f	CPU not running, module must be reloaded
2000 0121	Timeout waiting for alive signal from BOOT program.
2000 0122	Timeout waiting for module diagnostics, or module failure.
2000 0204	Invalid Event Enable state
2000 0205	Invalid Interrupt Enable state
2000 0206	Invalid Station number
2000 0207	Invalid Highest Station
2000 0208	Invalid Active state
2000 0209	Invalid Baud rate
2000 020a	Invalid Options
2000 020b	Invalid Target Token Rotation Time
2000 020c	Invalid Slot Time
2000 020d	Invalid Idle Time 1
2000 020e	Invalid Idle Time 2
2000 020f	Invalid Ready Time
2000 0210	Invalid Quiet Time
2000 0211	Invalid Token Retry Limit
2000 0212	Invalid Message Retry Limit
2000 0213	Invalid Token Error Limit
2000 0214	Invalid Response Error Limit
2000 0215	Invalid command
2000 0216	Not Online state (Command = "offline")
2000 0217	No error to clear (Command = "clear_err")
2000 0218	Not Off-line state (All commands except : "offline" and "clear_err")
2000 0219	Time-out executing command
2000 021b	Network configuration error
2000 0224	Master already configured
2000 0225	Invalid Global Master Control Configuration register
2000 0226	Invalid Min Cycle Time
2000 0227	Invalid Max Cycle Time
2000 0228	Invalid Master Block Number
2000 0229	Invalid Station Number (0-126)
2000 022a	Invalid Master Configuration Control register
2000 022b	Invalid Master RX length (0-244)
2000 022c	Invalid Master TX length (0-244)
2000 022d	Invalid RX offset (0-3FF8h - 8 byte boundary)
2000 022e	Invalid TX offset (0-3FF8h - 8 byte boundary)
2000 022f	Invalid Master Parameter length (0-23)
2000 0230	Invalid Master Watch Dog Factor 1 (1-255)
2000 0231	Invalid Master Watch Dog Factor 2 (1-255)

status (hexadecimal)	Description
2000 0232	Invalid Master Ready Time (1-255)
2000 0233	Invalid Master Check length (0-30)
2000 023b	Invalid Message block number
2000 0244	Invalid Message state
2000 0247	Invalid Destination Station
2000 0248	Invalid Destination SAP
2000 0249	Invalid Source SAP
2000 024a	Invalid Frame Control
2000 024b	Invalid Message Transmit Length
2000 0257	Message reply time out
2000 0259	No more resources for extended parameters available
2000 025a	Timeout updating passive stations
2000 025C	Online state expected
2000 04xx	Not Off-line state - cannot configure
2000 0501	DPV1 error
2000 0502	FDL error
2000 0602	Invalid length
2000 0603	No more FDL blocks available
2000 0604	Invalid number of blocks requested
2000 0606	Class 2 connection not initialized
2000 0608	Slave is not ready to deliver the response to a request
2000 0609	Invalid slave response
2000 060A	No FDL block available
2000 060B	DP-V1 already initialized
2000 060C	DP-V1 released or not initialized
2000 060D	Invalid C_Ref

9 Warranty and Support

9.1 Warranty

For warranty information pertaining to the card, refer to <http://www.mysst.com/warranty.asp>.

9.2 Reference Documents

For information on Profibus, refer to one of the following:

- Profibus standard DIN 19 245 parts 1, 2 and 3. Part 1 describes the low-level protocol and electrical characteristics, Part 2 describes FMS, and Part 3 describes DP.
- European Standard EN 50170

9.3 Technical Support

Please ensure that you have the following information readily available before calling for technical support:

- Card type and serial number
- Computer's make, model and hardware configuration (other cards installed)
- Operating system type and version
- Details of the problem you are experiencing: application module type and version, target network, and circumstances that may have caused the problem

9.3.1 Getting Help

Technical support is available during regular business hours by telephone, fax or email from any Woodhead Software & Electronics office, or from [contact.pdf](#).

10 Index

C

- caution
 - definition, 5, 26
- conventions
 - special notation, 5
 - special terms, 3
 - style, 3

M

- module
 - definition, 4

N

- note, definition, 5

P

- purpose, of guide, 3

R

- reference documents, 41

S

- support, 41

T

- technical
 - support, 41

W

- warning
 - definition, 5
- warranty, 41