ibaPDA-Interface-Reflective-Memory

Data Interface for Reflective Memory

Manual

Issue 4.1

Measurement Systems for Industry and Energy

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The content of this publication has been checked for compliance with the described hardware and software. Nevertheless, discrepancies cannot be ruled out, and we do not provide guarantee for complete conformity. However, the information furnished in this publication is updated regularly. Required corrections are contained in the following regulations or can be downloaded on the Internet.

The current version is available for download on our web site www.iba-ag.com.

Version	Date	Revision - Chapter / Page	Author	Version SW
4.1	01-2022	Structure for diagnostic signals	RM	7.0.0

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Content

1 About this Manual

This document describes the function and application of the software interface

ibaPDA-Interface-Reflective-Memory

This documentation is a supplement to the *ibaPDA* manual. Information about all the other characteristics and functions of *ibaPDA* can be found in the *ibaPDA* manual or in the online help.

1.1 Target group and previous knowledge

This documentation is aimed at qualified professionals, who are familiar with handling electrical and electronic modules as well as communication and measurement technology. A person is regarded as professional if he/she is capable of assessing safety and recognizing possible consequences and risks on the basis of his/her specialist training, knowledge and experience and knowledge of the standard regulations.

This documentation in particular addresses persons, who are concerned with the configuration, test, commissioning or maintenance of control systems using Reflective memory communication. For the handling of ibaPDA-Interface-Reflective-Memory the following basic knowledge is required and/or useful:

■ Windows operating system

■ Basic knowledge of *ibaPDA*

■ Knowledge of configuration and operation of the relevant control system

1.2 Notations

In this manual, the following notations are used:

Action	Notation
Menu command	Menu *Logic diagram*
Calling the menu command	*Step 1 – Step 2 – Step 3 – Step x* Example: Select the menu *Logic diagram - Add - New function block*.
Keys	<Key name> Example: <Alt>; <F1>
Press the keys simultaneously	<Key name> + <Key name> Example: <Alt> + <Ctrl>
Buttons	<Key name> Example: <OK>; <Cancel>
File names, paths	"Filename", "Path" Example: "Test.doc"

1.3   Used symbols

If safety instructions or other notes are used in this manual, they mean:

Danger!

The non-observance of this safety information may result in an imminent risk of death or severe injury:

■ Observe the specified measures.

Warning!

The non-observance of this safety information may result in a potential risk of death or severe injury!

■ Observe the specified measures.

Caution!

The non-observance of this safety information may result in a potential risk of injury or material damage!

■ Observe the specified measures

Note

A note specifies special requirements or actions to be observed.

Tip

Tip or example as a helpful note or insider tip to make the work a little bit easier.

Other documentation

Reference to additional documentation or further reading.

2   System requirements

The following system requirements are necessary for the use of the Reflective Memory data interface:

- *ibaPDA* v7.0 or higher

- License for *ibaPDA-Interface-Reflective-Memory*

- Reflective Memory PC-board from GE Intelligent Platforms
  The following board types are supported:
  Windows 64 bit systems (x64): PCIE-5565PIORC, PCI-5565PIORC, VMIC-5565, VMIC-5576
  Windows 32 bit systems (x86): PCIE-5565PIORC, PCI-5565PIORC VMIC-5565, VMIC-5576, VMIC-5579, VMIC-5587, VMIC-5588

For further requirements for the used computer hardware and the supported operating systems, please refer to the *ibaPDA* documentation.

License information

Order no.	Product name	Description
31.001220	ibaPDA-Interface-Reflective-Memory	Extension license for an ibaPDA system adding a data interface for connecting to a Reflective-Memory node or network

If the "Reflective Memory" interface is not displayed in the signal tree, you can either check in *ibaPDA* under *General - Settings - License info* in the I/O manager, in the *ibaPDA* service status application or by means of *ibaDongleViewer*, whether your license "Interface Reflective Memory" has been properly recognised.

3   Reflective Memory interface

3.1   General information

The Reflective Memory (RM) interface is based on the use of a special hardware, manufactured by General Electric (formerly by GE Fanuc and VMIC). RM interface boards are available for a variety of systems, such as PCI Express, PCI and VME. *ibaPDA* drivers support the boards VMIPCI 5565, 5576, 5579, 5587, 5588 and respectively the more recent models PCI-5565PIORC and PCIE-5565PIORC (see ↗ *System requirements*, page 6).

The "Direct Memory Access" mode (DMA mode) is supported for the boards VMIPCI 5565 respectively PCI-5565PIORC and PCIE-5565PIORC.

The Reflective Memory interface offers different module types.

■ Reflective Memory with up to 1000 analog and 1000 digital signals per module, supporting asynchronous mode and DMA

■ Reflective Memory dig512 with up to 32 * 16 digital signals per module, supporting asynchronous mode and DMA

■ X-Pact Lite, with up to 1000 analog and 1000 digital signals per module, supporting asynchronous mode and DMA (only with license for X-Pact v1 and/or v2)

■ HiPAC Request (only with HiPAC interface license)

■ Reflective Memory Text

A maximum of up to 1024 modules are supported per interface.

The number of signals to be used is only limited by the ibaPDA license and the performance of the systems.

For further information on module configuration, refer to ...

■ ↗ *Module type Reflective Memory*, page 15

■ ↗ *Module type Reflective Memory dig512*, page 19

■ Module type X-Pact Lite, description see manual *ibaPDA-Request-X-Pact*

■ Module type HiPAC Request, description see manual *ibaPDA-Request-HiPAC*

■ ↗ *Module type Reflective Memory Text*, page 23

Together with the Reflective Memory interface license and the appropriate interface boards you can furthermore use Reflective Memory as data channel for the Request products:

■ Request-HPCi (incl. HPCi-Lite), refer to software manual *ibaPDA-Request-HPCi*

■ Request-DTBox, refer to software manual *ibaPDA-Request-DTBox*

Functional principle

The PC boards are used to establish a connection to a RM network. P2P connections to a single node are possible as well.

An efficient and fast hardware architecture provides for deterministic data transmission with low latency and low CPU load.

Individual nodes on the network only need to write into/read from the dual port RAM and then within microseconds all nodes on the network have the same data.

3.2 System topologies

A Reflective Memory network can be set up in a ring or star topology.

Source: GE Intelligent Platforms

3.3 Configuration and engineering ibaPDA

Open the I/O manager, e.g., from the toolbar 🖼️.

If all system requirements are met, the Reflective Memory interface will be displayed in the signal tree.

The interface is only visible if the Reflective Memory license is enabled in the dongle **and** a Reflective Memory interface board is installed in the PC.
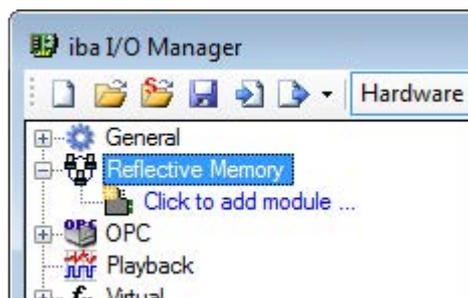
3.3.1   Interface configuration

3.3.1.1   Properties
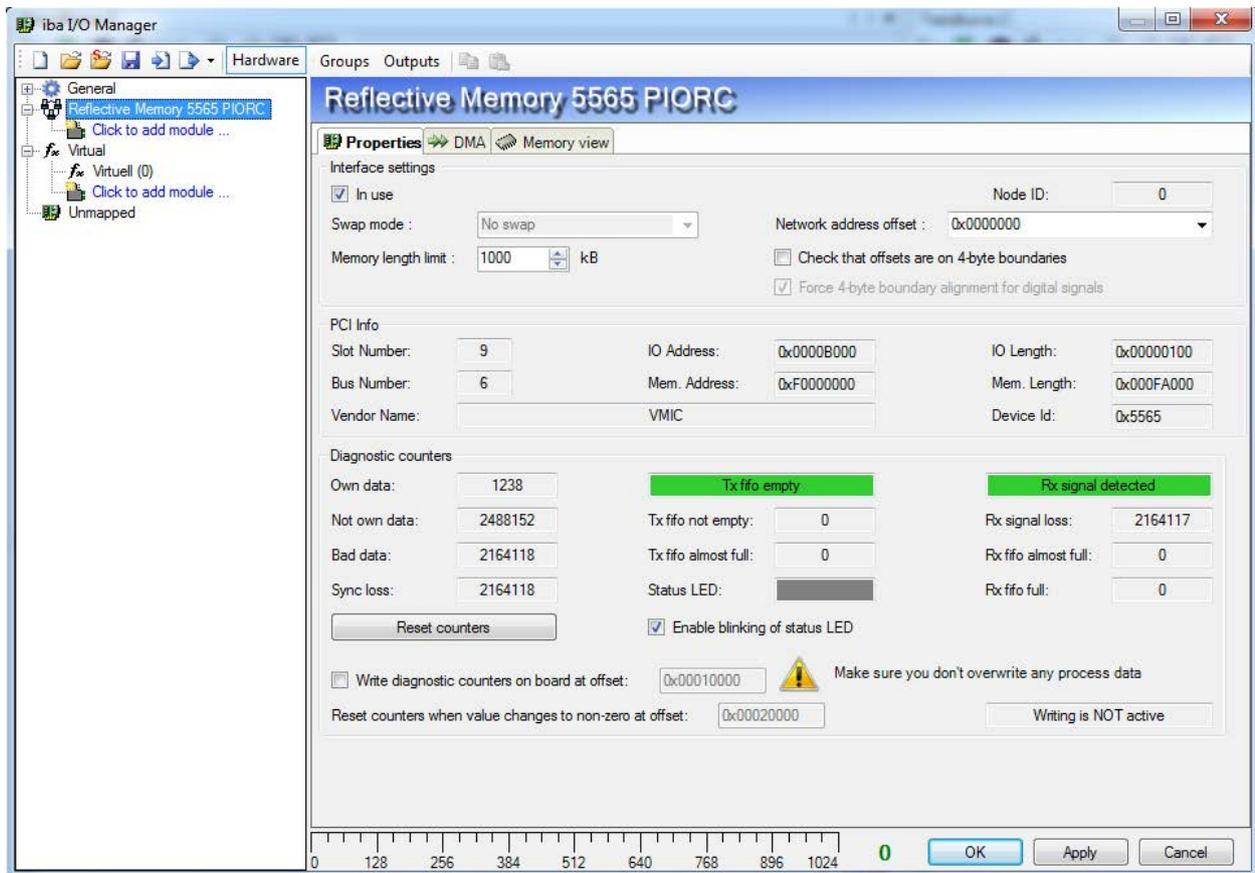
The part "Diagnostic counters" is not available for all boards.

Interface settings

"In use" check box
If the RM interface card should be used by *ibaPDA*, you must check this box.

This is, for example, necessary if *ibaPDA* and *ibaLogic* are active in a hybrid configuration on the PC, with each application having to use its own boards. One board must only be used by one application.

Swap mode
Select the appropriate swap mode from the drop-down list in this field. The drop-down list provides several options of high- and low byte swapping (Endian Control). Which swap mode is suitable for your configuration depends on the connected source system. Changes in this setting have immediate effect unless acquisition is running. If the acquisition is running at this time, the changing applies only after pressing <OK>. The acquisition is then stopped and restarted.

This setting is disabled with recent boards such as PCI 5565PIORC. You can select the swap mode in the settings of the data module, see ⏎ *Reflective Memory - General tab*, page 15 .

Memory length limit

This parameter describes the size of the mapped memory space. You should adjust the memory size according to your needs, either by means of the up/down arrows or by entering a value. Reduce the size if you do not need that much memory length. This will save memory space in the *ibaPDA* computer.

Node ID

This is the node ID as set on the RM interface board in the *ibaPDA* computer. It is for display only and cannot be altered here.

Network address offset

This optional setting is only available if a card of VMIC 5576 type is used. The exact setting of a network address offset is required if a 256 kB or a 512 kB card is used in a 1 MB ring.

Check that offsets are on 4-byte limits

Usually, the checking of the 4-byte limits is selected by default in order to guarantee a data addressing without gaps. Data of 4-byte size (DINT, DWORD, FLOAT) must always be addressed on a 4-byte offset, relative to the start address. If not, an error message will be generated and the configuration is not valid.

When addressing data, otherwise than on 4-byte limits, be sure to disable this option in order to suppress error messages.

Force 4-byte limit alignment for digital signals

If this option is enabled, it makes sure that the data is always read along 4-byte limits. This is done to prevent sending of wrong data by some Reflective Memory boards if not reading exactly along 4-byte boundaries.

This option is enabled by default when a 5565PIORC board is used.

PCI Info

Besides vendor name and device ID you'll find slot and bus number, PCI-memory addresses and IO-addresses. If the fields are empty or contain implausible values, then the board is plugged into the wrong PCI slot.

Diagnostic counters (available for PCI/PCIE 5565PIORC only)

In the section *Diagnostic counters* you will find a couple of counters and status information which could be helpful when verifying the interface activity between *ibaPDA* and the Reflective Memory board.

Other documentation

A detailed description of the diagnostic counters and status information can be found in the user manual of the *Reflective Memory* module.

Example PCI-5565PIORC: Hardware Reference, Publication No: Publication no. 500-9367855565-000 Rev. C
There, you will find the related information in the chapters 3.3.5 "Local Control and Status Register 1" (LCSR) and 3.3.6 "Local Interrupt Status Register" (LISR).

■ Own data
Number of times LCSR bit 0 was 1

■ Not own data
Number of times LCSR bit 0 was 0

■ Bad data
Number of times LISR bit 8 was 1

■ Sync loss
Number of times LISR bit 11 was 1

■ Tx Fifo not empty
Number of times LCSR bit 7 was 0
The field above this counter shows the status of the Tx Fifo as text.
Therefore, the LCSR bit 8 is evaluated:
Status 0 = Tx Fifo empty + green background
Status 1 = Tx Fifo not empty + red background

■ Tx Fifo almost full
Number of times LCSR bit 6 was 1

■ Status LED
Status LCSR bit 31, refers to the red status LED on the board

■ Rx signal loss
Number of times LCSR bit 2 was 0
The field above this counter shows the status of the Rx signal as text.
Therefore, the LCSR bit 2 is evaluated:
Status 0 = Rx no signal + red background
Status 1 = Rx signal detected + green background

■ Rx Fifo almost full
Number of times LISR bit 9 was 1

■ Rx Fifo full
Number of times LISR bit 10 was 1

■ Button <Reset counters>
Click on this button in order to reset all counters to 0 (zero).

■ Enable blinking status LED
If you enable this option, *ibaPDA* will toggle the LCSR bit 31 in 0.5 Hz clock. This function can be used for monitoring of the communication between *ibaPDA* and the Reflective Memory board.

■ Write diagnostic counters on board at offset...
If you enable this option, then counter values and status information will cyclically be written into a memory range, which you can address by an offset in the adjacent entry field.
Make sure that this range is not used for other data.
This function is disabled by default because it is only needed for extended diagnostics.
The following structure applies to the diagnostic data:

```
dword RfmOwnDataCnt

dword RfmOwnDataNotCnt

dword RfmRxSigLossCnt

dword RfmTxFifoAlmostFullCnt

dword RfmTxFifoEmptyNotCnt

dword RfmBadDataCnt

dword RfmSyncLossCnt

dword RfmRxFifoAlmostFullCnt

dword RfmRxFifoFullCnt

dword RfmStatusWord    // bit 0 : Rx SignalDetected

                       // bit 1 : Tx Fifo Empty

dword RfmStatusToggle; // bit 0 : toggles every 0.5 sec,
                           controls status LED on the board
```

■ Reset counters when value changes to non-zero at offset
  If you enable this option, then a memory, address which you can enter in the adjacent field,
  will be monitored.
  The display field further on the right indicates whether *ibaPDA* writes the diagnostic counters
  in the Reflective Memory or not (Writing is active/Writing is NOT active).

3.3.1.2 DMA

If the DMA mode is enabled (see ↗ *Reflective Memory - General tab*, page 15), you can find
in the DMA tab information for diagnostic purposes about the data exchange between *ibaPDA*
software and the Reflective Memory interface board.

3.3.1.3 Hex view
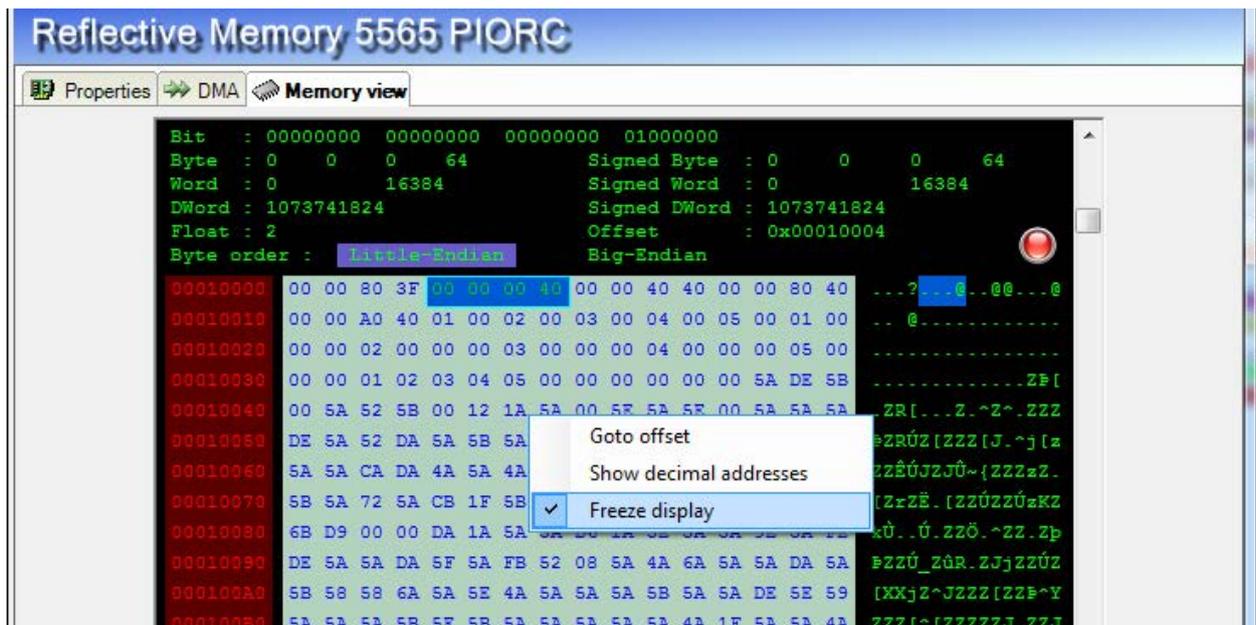
This view provides very detailed information about memory use to the service staff.

Usually there is no need to access this dialog. The blinking green light indicates a running system. The offset addresses equal the address entries in the signal tables of the data modules. You can identify the formatting of the incoming data (Swap mode). A right mouse click opens a shortcut menu. It is possible to switch the address mode from hexadecimal to decimal (or vice versa) and to freeze the display with the shortcuts.

3.3.2 Add module

Add a module by clicking below the interface.

There are different types of modules, which can be added to the Reflective Memory interface.

Availability of module types depends on your licenses.

Select the desired module type and click <OK>.
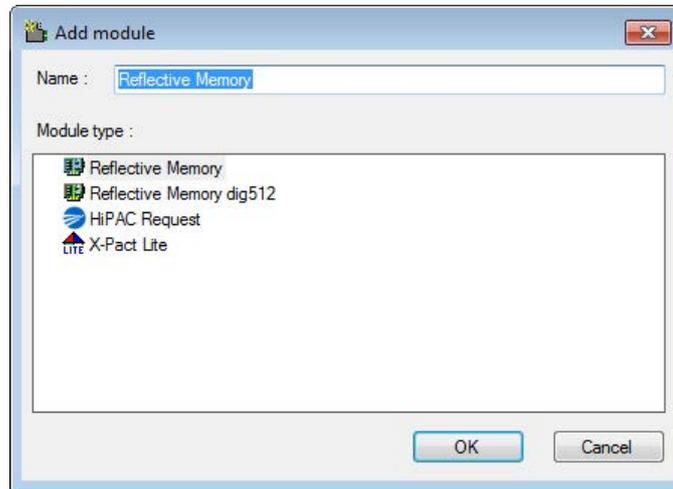
3.3.3 General Module Settings
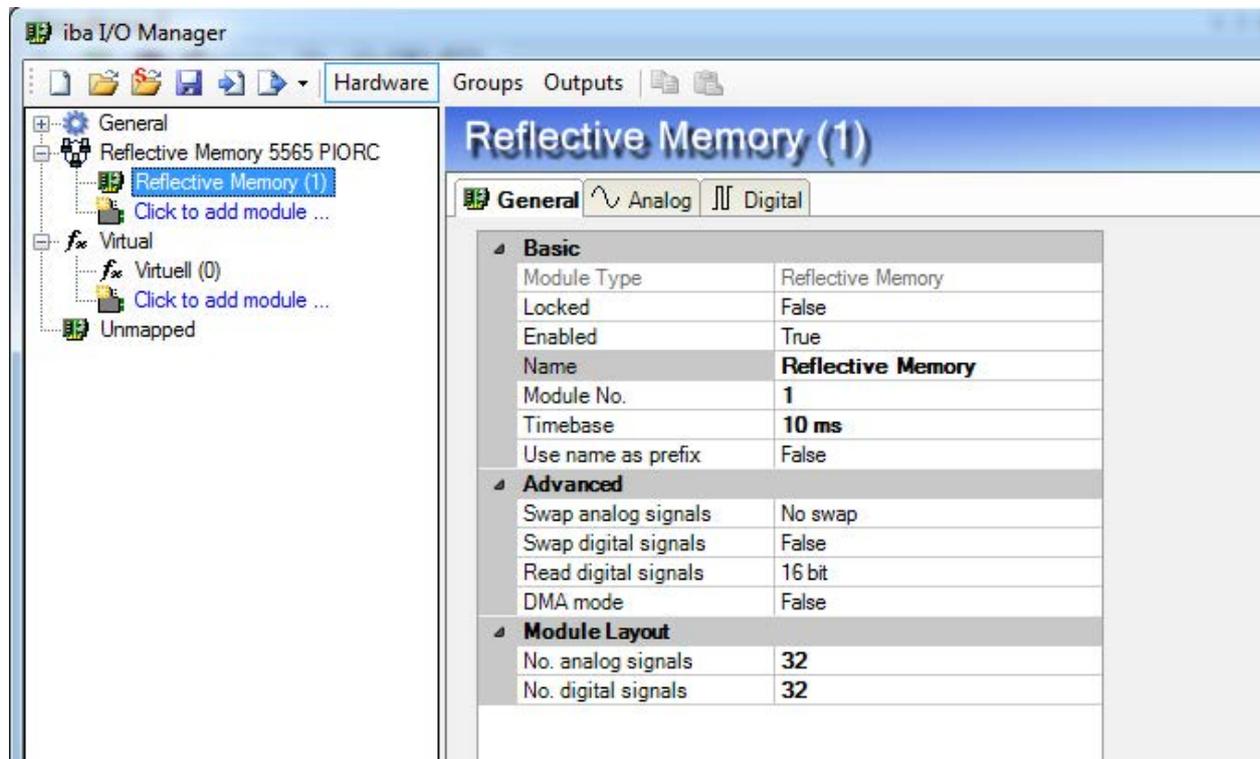
All modules have the following common setting options.

Basic settings

Module Type (information only)
Indicates the type of the current module.

Locked
A module can be locked to avoid unintentional or unauthorized changing of the module settings.

Enabled
Disabled modules are excluded from signal acquisition.

Name
The plain text name should be entered here as the module designation.

Module No.
Internal reference number of the module. This number determines the order of the modules in the signal tree of *ibaPDA* client and *ibaAnalyzer*.

Timebase
All signals of the module will be sampled on this time base.

Use name as prefix
Puts the module name in front of the signal names.

3.3.4   Module type Reflective Memory

The module type Reflective Memory is used for collecting up to 1000 analog (real) and 1000 digital signals per module over a Reflective Memory connection. A selection of eight different data types is available for analog values:
BYTE, INT, DINT, WORD, DWORD, FLOAT, DOUBLE, FP_REAL.

The size of the module, i. e. the number of signals can be altered. Default setting is 32 A + 32 D signals. If you need more signals, just add them to the module or add another module.

3.3.4.1   Reflective Memory - General tab

For basic settings, see ↗ *General Module Settings*, page 14

Advanced

Swap analog signals
Set the swap mode according to the signal source.
You can choose between the following 4 options:

Mode	16 bit	32 bit
No swap	AB	ABCD
Depending on data type	BA	DCBA
Swap 16 bit	AB	CDAB
Swap 8 bit	BA	BADC

The swap mode to be selected depends on the swap mode of the signal source.

Swap digital signals
Choose here whether the digital signals should be swapped on a 4-byte basis.

- False: no swap (default)

- True: byte order changes from access mode
  - for 16-bit access from AB to BA
  - for 32-bit access from ABCD to DCBA

Read digital signals
Select, how the digital signals should be fetched. Depending on your selection the swap mode, the addresses and bit numbers in the signal table *Digital* will be adapted automatically.

- 16 bit: addresses change in 2-byte steps, bit no. 0...15

- 32 bit: addresses change in 4-byte steps, bit no. 0...31

DMA mode (only for boards which support DMA, e.g. PCI/PCIE-5565PIORC)
Enable the DMA mode in order to improve performance of the board and reduce the CPU load of the PC.

Asynchronous mode (only for boards which do not support DMA, e.g. PCI-5576)
In asynchronous mode, the data is copied from the card's memory into the memory of *ibaPDA* outside of the interrupt service routine (ISR). This mode can be used to measure large data volumes on a slower time base. If you want to activate the asynchronous mode, set this option on TRUE.

Module layout

Number of analog and digital signals
Here, you can increase or decrease the number of signals in the module. By default, 32 signals are preset. You may enter any value between 0 and 1000. The signal tables will be adjusted accordingly.

3.3.4.2   Reflective Memory - Analog tab

You can find a more detailed description of the following columns and some operating hints in the manual of *ibaPDA*, in chapter "Notes on working in the signal tables".

Name
In the Name column, enter a cleartext name for each signal.

Up to two lines of comment may be entered for each signal in the column *Name.*

You get the entry dialog for the comments by mouse click on the small button in the Name field of the signal.

Unit
Assignment of an engineering unit (such as Ampere, Volt, etc.) for the signal.

Gain and Offset
The values for gain and offset describe a linear characteristic curve for scaling. If incoming values are given in physical units, gain and offset can be ignored, i.e. set gain = 1 and offset = 0.

Gain and offset can be entered directly in the corresponding fields or by means of the two-point-scaling dialog with two pairs of applicable values.

You can open the two-point-scaling dialog with a click on the little tool button in the fields gain or offset. (Cursor must be on the fields to see the button ⬍.

Address

In the Address column, the user can specify the byte offset of every single analog value in the Reflective Memory. The offset should be entered as decimal or hexadecimal values. In order to get some default values you may use the automatic fill function (see *ibaPDA* manual).

- Analog signals (Reflective Memory module) in FLOAT-format 4 Byte-steps

- Analog signals (Reflective Memory module) in INT16-format: 2 Byte steps

- Analog signals (Reflective Memory module) in BYTE-format: 1 Byte steps

---

Note

| i | It is recommended to configure the data to be transmitted in consecutive memory ranges, i.e. the signals should have consecutive addresses. Otherwise a significant loss of performance might occur. |

Data type

In the fields of this column, you can select the relevant data type used for each signal. Click in the corresponding field and select the data type from the drop-down list. The address space depends on the data type. Therefore, an adjustment of address entries might be necessary after changing the data types.

Available data types:

Data type	Description	Values Range
BYTE	8 bit without positive or negative sign	0 ... 255
INT	16 bit with positive or negative sign	-32768 ... 32767
WORD	16 bit without positive or negative sign	0 ... 65535
DINT	32 bit with positive or negative sign	-2147483648 ... 2147483647
DWORD	32 bit without positive or negative sign	0 ... 4294967295
FLOAT	IEEE754; single precision; 32 bit floating point	±3,402823 E+38 ... ±1,175495 E-38
DOUBLE	IEEE754; double precision; 64 bit floating point	2.225E-308 ... 1.798E+308
FP_REAL	Fixed point real; Q15.16; 15 integer bits and 16 fractional bits;	-32768 ... 32767.9999

Activating channels

You can enable and disable every channel for acquisition with a mouse click.

Actual value
The fields in this column show the actual value of the signals. Even if the acquisition is not running yet the actual value may be displayed if the hardware is already connected and working (diagnostic feature).

3.3.4.3   Reflective Memory - Digital tab

You can find a more detailed description of the following columns and some operating hints in the manual of *ibaPDA*, in chapter "Notes on working in the signal tables".

Name
In the Name column, enter a cleartext name for each signal.

Up to two lines of comment may be entered for each signal in the column *Name.*

You get the entry dialog for the comments by mouse click on the small button in the Name field of the signal.

Address
This column is used for addressing each status word or double word in the Reflective Memory, depending on the access mode 16 bit or 32 bit.

Note

It is recommended to configure the data to be transmitted in consecutive memory ranges, i.e. the signals should have consecutive addresses. Otherwise a significant loss of performance might occur.

Bit No.
The number describes the position of the digital signal in the Reflective Memory range with reference to the offset address entry.

Addressing of bits depends on the access mode: - 16 bit access mode: bits 0 to 15 of a status word - 32 bit access mode: bits 0 to 31 of a double word

Activating channels
You can enable and disable every channel for acquisition with a mouse click.

Actual value
The fields in this column show the actual value of the signals. Even if the acquisition is not running yet the actual value may be displayed if the hardware is already connected and working (diagnostic feature). For digital signals, only the values 0 and 1 are shown.

3.3.5 Module type Reflective Memory dig512

The module type Reflective Memory dig512 is used for collecting up to 32 * 16 = 512 digital signals per module over a Reflective Memory connection. The bits are packed in 16bit-integer values.

3.3.5.1 Reflective Memory dig512 - General tab

For basic settings, see ➚ *General Module Settings*, page 14

Advanced

Swap digital signals
Choose here whether the digital signals should be swapped on a 4-byte basis.

- False: no swap (default)

- True: byte order changes from access mode
  - for 16-bit access from AB to BA
  - for 32-bit access from ABCD to DCBA

Asynchronous mode or DMA mode
See ➚ *Reflective Memory - General tab*, page 15 for more information.

3.3.5.2 Reflective Memory dig512 - Digital tab
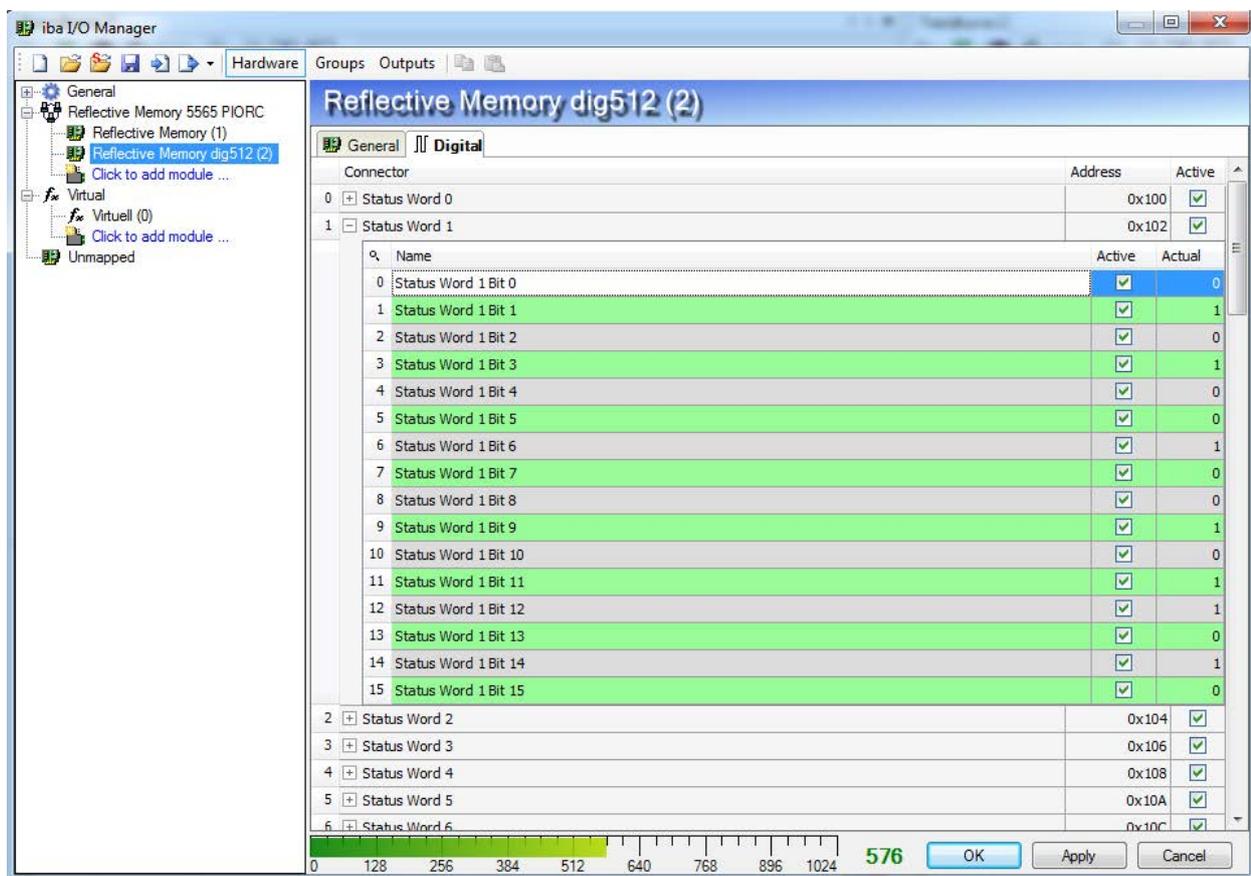
The signal table for modules with dig512 format consist of two levels.

The first level shows the so-called connectors and activation attributes.

If you click on the small plus symbols in the table rows, the second level of the signal table opens and you can see the actual signals (16 per connector).

Connector level

Connector
Following the principle of the former ibaDig512 device, the separate data packages are referred to as connectors. One connector corresponds to an integer word with 16 bits.

You can give a cleartext name to the connector in this column Connector. This name is useful for technological assignment. Digital signals are grouped under each connector on the second level.

Address
In this column enter the byte offsets of every signal in the Reflective Memory range. The default settings can or usually should be adapted.

Activating
You can enable and disable every connector for acquisition with a mouse click.

A click on the column heading "Active" enables and disables all the connectors at the same time. Individual connectors can be enabled the connector-specific checkbox. If you want to enable / disable the signals individually, you should do it on the second level. If activation of the signals of a connector is not homogeneous, the activation checkbox of the connector is displayed in gray.

Signal Table

Name
In the Name column, enter a cleartext name for each signal.

Up to two lines of comment may be entered for each signal in the column *Name.*

You get the entry dialog for the comments by mouse click on the small button in the Name field of the signal.

Activating channels
You can enable and disable every channel for acquisition with a mouse click.

Actual value
The fields in this column show the actual value of the signals. Even if the acquisition is not running yet the actual value may be displayed if the hardware is already connected and working (diagnostic feature). For digital signals, only the values 0 and 1 are shown.

3.4   Configuration of the ibaPDA output modules

It is possible to write data from *ibaPDA* into the Reflective Memory. If all system requirements are fulfilled (see system requirements), then the interface, e.g. "Reflective Memory 5565 PIORC", will be shown in the tree structure within the I/O Manager's "*Outputs*" section. No manual addition of the interface is required.

3.4.1   Add module

Add a module by clicking below the interface node in the tree and select the module type.

3.4.2   General Module Settings

In order to configure a module, click on it in the tree, select the *General* tab and make the required settings in the dialog.
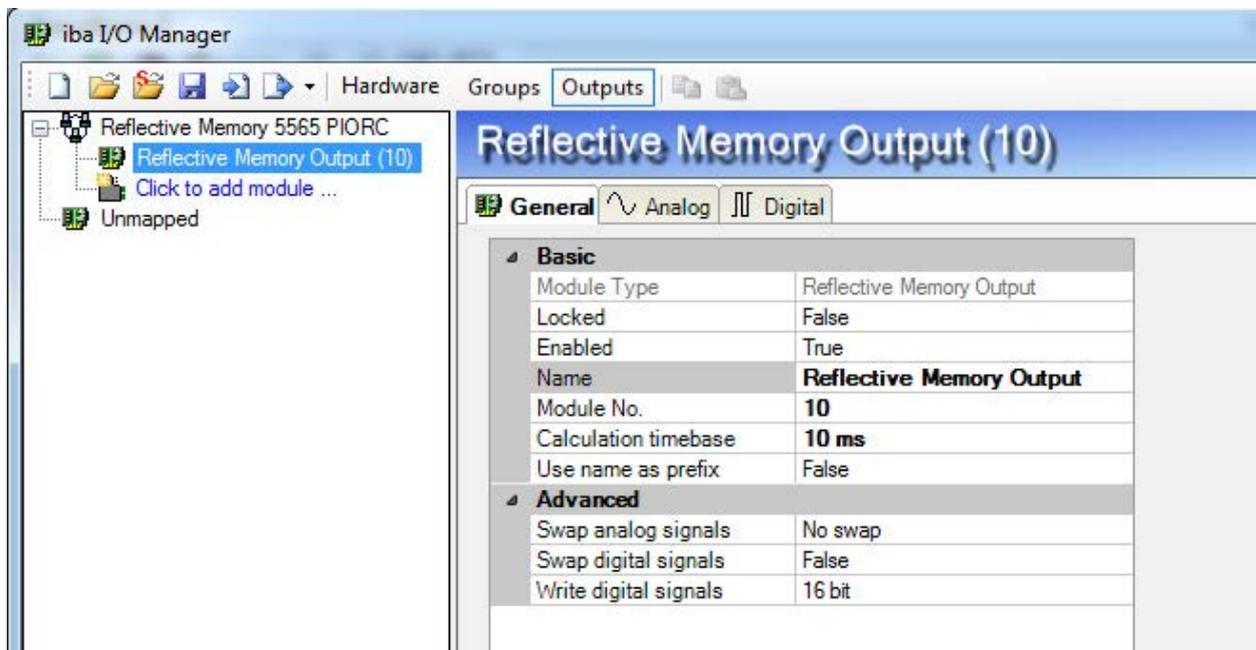
The parameters are similar to those of the input modules.

For basic settings see ↗ *General Module Settings*, page 14 and ↗ *Reflective Memory - General tab*, page 15

Calculation timebase
The timebase used for calculating output values. You can set this timebase independently of the general timebase and the timebase of the input modules. The sending of the output values is done with low priority and can be delayed and superseded by data acquisition tasks which always have higher priority since this is the core functionality of *ibaPDA*. The attempted minimum output cycle time is independent from the calculation timebase. The minimum output cycle time is fastest **50 ms** or the least common multiple of all input timebases.

Check the current minimum output cycle time of your system in the I/O Manager under *General* – tab *Timing*.

3.4.3 Signal configuration

You can configure the desired output signals in the column "Expression" on the tabs *Analog* and *Digital*, just like for the virtual signals. You can enter simple expressions or references to existing signals directly into the table or you open the expression editor dialog via the <fx>-button.

Tip

If you define the output data in a virtual module first and make just a reference to those data here, then you have the possibility to record these data in a data storage.

Configuration Reflective Memory - output signals

Name
In the Name column, enter a cleartext name for each signal.

Expression
Here, enter an expression or a reference to an existing signal or open the expression editor dialog via the <fx>-button. A wrong expression can be analyzed by clicking on the<?>-button.

Active
For disabled signals, the value 0 will be written to the message buffer.

Actual value
Display of the actual calculated value of the expression

Analog signals

Address
In the column "Address", you can enter the byte offset of the value inside the output telegram.

Data type
See ⬀ *Reflective Memory - Analog tab*, page 16

Digital signals

Address, Bit-No.
This determines the offset of a value inside the output telegram.

With reference to the setting at "Write digital signals..." the address values and bit numbers in the signal table *Digital* will be adapted automatically.

- Writing as 16 bit: addresses change in 2-byte steps, bit no. 0...15

- Writing as 32 bit: addresses change in 4-byte steps, bit no. 0...31

If swapping is enabled for the module, then it applies to the writing of data as well:

- 16 bit: from AB to BA

- 32 bit from ABCD to DCBA

Note, that the result should be True or False, respectively 0 or 1, for digital signals.

3.5   Module type Reflective Memory Text

Textual data (ASCII) may be transmitted to an *ibaPDA* system via a Reflective Memory connection as well. You should configure acquisition of the text in the I/O manager with a special text module.

Note

Since release of version 7 of ibaPDA the former "Technostrings" have been replaced by the facility of text modules and text signals.

I/O configurations of former ibaPDA versions (v6.x) can be converted automatically. For each Technostring a new text module is created to make sure that the further processing of texts in data files and analyses can remain unchanged.

More and general information about text signals can be found in the ibaPDA manual.

3.5.1   Add a text module

In the I/O manager click on "Click to add module..." beneath the Reflective Memory interface.
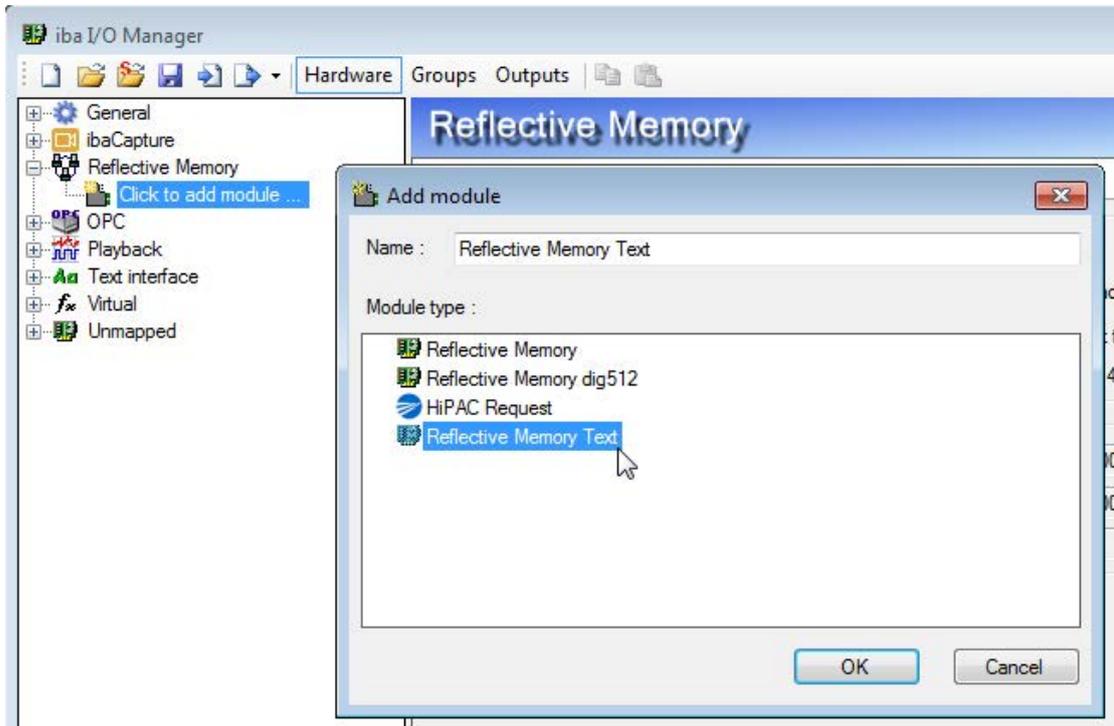
Select the module type "Reflective Memory Text" and click on <OK>.

3.5.2   General module settings

Basic settings

Module Type (information only)
Indicates the type of the current module.

Locked
A module can be locked in order to prevent change of module settings by accident or unauthorized users.

Enabled
Disabled modules are excluded from the signal acquisition.

Name
The plain text name should be entered here as the module designation.

Module No.
Internal reference number of the module. This number determines the order of the modules in the signal tree of *ibaPDA* client and *ibaAnalyzer*.

Time base
All signals of the module will be sampled on this time base.

Use name as prefix
Puts the module name in front of the signal names.

Text encoding
You can select the type of text coding or the code page here for a correct interpretation and display of the received text data. Available for selection are:

- System locale (default): Coding according to the Windows system settings

- Western European (1252): 8-bit coding, including ASCII and Western European umlauts, special characters

- UTF-8: Unicode, for universal characters, including ASCII, Asian languages, etc.

Source:

Update time
This is the reading cycle for the text. The value must be equal or higher than the module time base (basic settings).

Swap mode
If swapping is required for correct reception, you can set it up here. Available for selection in the drop-down list are different swap modes. Which mode is the right one depends on the connected system.

Text offset
Enter here the offset of the beginning of the text within the memory range of the board (hexadecimal value).

Use counter
If you enable this option (True), then ibaPDA reads a 16 bit counter, which changes with every new text. This improves the performance because ibaPDA only needs to read the counter value (2 bytes) and not the entire text. Not before the counter has changed the entire text will be read. The counter has to be increased by the application in the source system with every new text sent.

This option enabled, an additional line for the counter offset appears. Enter here the address of the counter within the Reflective Memory address range (given as hex value).

Default value = 0x2000

Use terminator
Enable this option (True) if the text can have a variable length. If the option is set on "True" an additional line for the terminator character appears. Enter here the character which is used by the source system for termination of the text.

Default terminator is the Carriage Return character (ASCII code 13 dec)

Module layout

Number of analog signals

The default setting for the number of analog signals is 32. If required, you can change the number. Permissible range: 1 to 1000.

Processing

Delete new lines
If you activate this option (True), then all line feeds ('new lines") will be removed when parsing the input text.

Replacing characters
Enter a character here that is to replace all non-printable characters in the input text. Default: x.

Decimal point
Select the decimal separator here so that numerical values with decimal points in the text are correctly interpreted: Period or comma

Separating mode
Select the suitable mode here that corresponds to the input text structure in order to always correctly read out the information contained:

- Fixed width

- Delimiter

- JSON

Note

You'll find a comprehensive description of the split modes in the ibaPDA manual, part 2, chapter Text splitter module.

4   Support and contact

Support

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Note

	If you need support for software products, please state the license number or the CodeMeter container number (WIBU dongle). For hardware products, please have the serial number of the device ready.

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