Instructions for Use

Data Export Test Tool

MP2/X2, MP5/20/30/40/50/60/70/80/90 & MX800

PHILIPS

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About this Guide

These Instructions for Use are for technicians and biomedical engineers using the Data Export Test Tool (DETT) with the Philips IntelliVue MP2 / X2 / MP5 / MP20 / MP30 / MP40 / MP50 / MP60 / MP70 / MP80 / MP90 /MX800 (M8102A / M3002A / M8105A / M8001A / M8002A / M8003A / M8004A / M8005A / M8007A / M8008A / M8010A / 865240) patient monitors, hereafter referred to as the patient monitor. They describe the functionality of the Data Export Test Tool.

IFU (Instructions for Use) is used as an abbreviation and will refer to this document.

WARNING

This Data Export Test Tool is not intended for clinical use.

In this guide

- A warning alerts you to a potential serious outcome, adverse event or safety hazard. Failure to observe a warning may result in death or serious injury to the user or patient.
- A caution alerts you where special care is necessary for the safe and effective use of the product. Failure to observe a caution may result in minor or moderate personal injury or damage to the product or other property, and possibly in a remote risk of more serious injury.

About the Data Export Test Tool

DETT is used to test the communication interface protocol, which transfers data from the Philips IntelliVue Patient Monitor via the Local Area Network (LAN) Interface or Serial Interface (MIB/RS232) to an external Computer.

The IntelliVue Data Export Interface cannot be accessed via the Local Area Network when the IntelliVue monitor is connected to the Philips LAN, e.g. to an Information Center (central station).

Communication via the MIB/RS232 Interface is always possible.

Please refer to the latest version of the Data Export Interface Programming Guide for further details about the IntelliVue Data export interface specifications.

CAUTION

The computer client (the interfacing system) and/or the user of the communication system must comply with applicable data privacy regulations.

Manufacturer's Information

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DETT - Instructions for Use

Installation of DETT

Unzip the downloaded version to the desired installation directory. The following files are unzipped to the installation directory:

\DETT

- BinaryStreamer.dll
- configuration.xml
- DataExportTestTool.chm
- DETT.exe
- MdilDataTypes.dll
- Tnlscat.x
- PluginInterfaces.dll

\DETT\Plugins

- ConnectionStatePlugin.dll
- DataStorePlugin.dll
- DiscoverPlugin.dll
- DiscoverSerialPlugin.dll

Un-Installation of DETT

Delete the DETT installation directory including DETT.exe.

Log files deletion: Delete DETT log files either in the default program directory or the selected log files path (refer to "File -> Configuration").

Deletion of Log Files

DETT generates log files when connected to an IntelliVue monitor.

Logfiles are marked as "*.txt" - Files with DevIFTest as prefix, e.g. DevIfTest_20100222_103626_COM1_115200.txt

To delete the log files, manually delete the files that are either stored in the default program directory or the selected log files path (refer to "File -> Configuration").

As the log files can take up a considerable amount of disk space we recommend that you delete the log files when they are no longer needed.

System Requirements for DETT

To use the DETT, your PC must fulfill these minimum requirements:

- Processor: 1 GHz or better is required
- Installed Memory: 512 MB RAM (required), 1GB (recommended).
- Free hard disk space:
  About 2 MB for the zip file and less than 10 MB for the extracted tool excl. stored log files.

NOTE

Future releases of the DETT may require more hard disk space.

- Network Interface Card with 10BaseT half-duplex. It is recommended that you install the latest driver available for your Network Card.
- RS-232 interface to communicate with the IV MIB/RS-232 interface or support of an USB/ RS-232 converter
- Super VGA monitor with at least 800 x 600 pixels screen resolution (required), 1024 x 768 or better (recommended).
- Operating System: Windows XP (32 bit version), Windows Vista (32-bit version) or Windows 7 (32- and 64-bit version).

Other compatible operating systems have not been tested.

.NET Framework 3.5 is required

NOTE

Windows Vista and Windows 7 should use 96 DPI (100%) as screen resolution to avoid DETT menu text to be shortened or compressed.

How to start DETT

Double click on the "DETT.exe" file stored in the DETT installation directory to start the application. Windows system admin rights are required.

After starting the application, the main window is displayed. No system data is displayed. The application window consists of these main areas:

1 - Menu

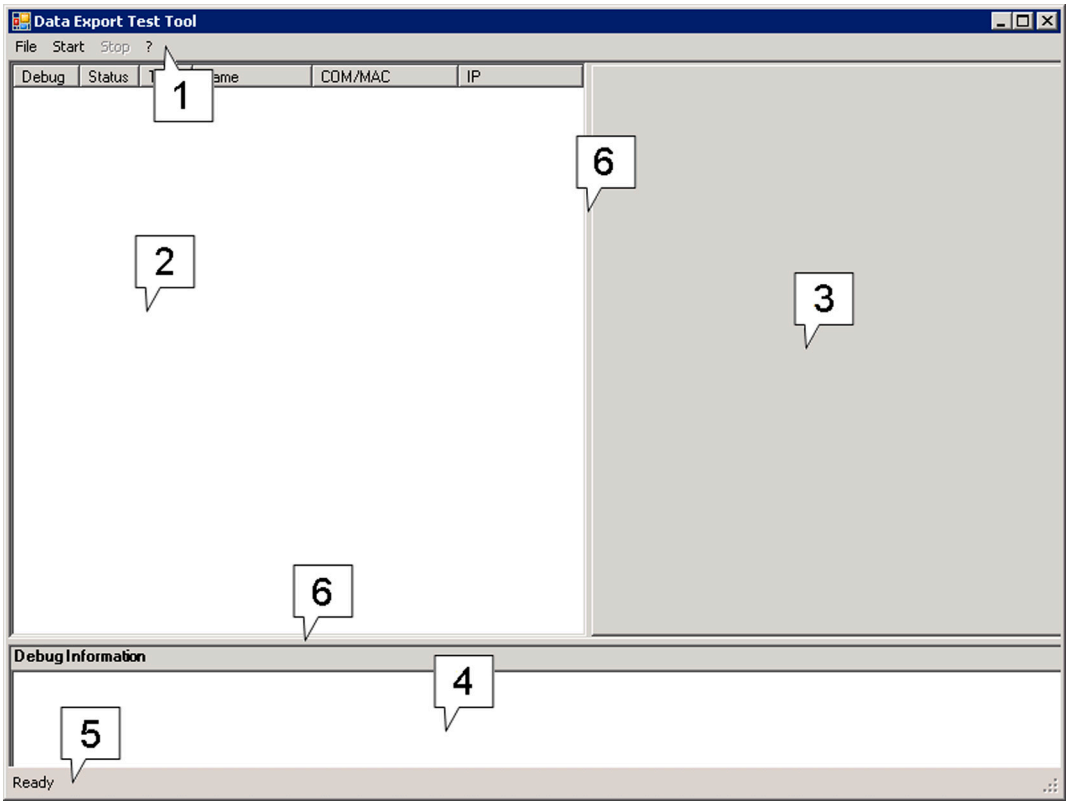
2 - System List Window

3 - System Details Window

4 - Debug Information Window

5 - Status Strip

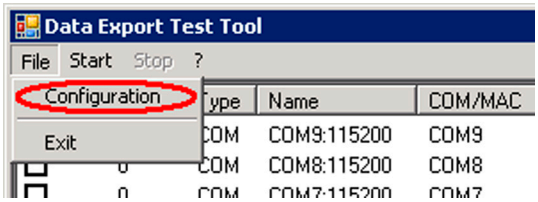
6 - Frame Border, which can be dragged to change split screen size



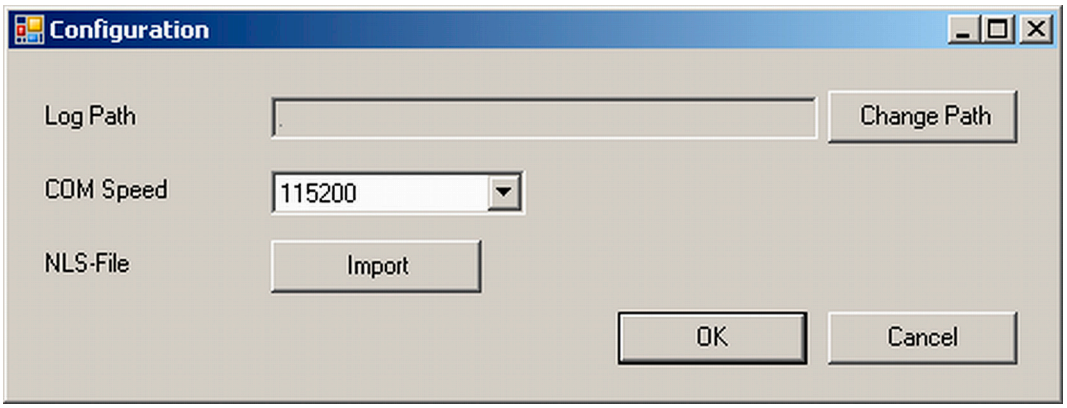
Refer to chapter "DETT overview example" for an example of how DETT displays connected patient monitor devices.

The Menu

File -> Configuration



In the "File" pull down menu select "Configuration" to import a new NLS text catalog file, change the default path for the log files or change the baud rate of the COM interface.



When selecting "Change path" the log file path can be adapted to any PC or network directory. The default path for the log files is given by the installation path of the DETT.

Log Path

Logfiles are marked as "*.txt" - Files with DevIFTest as prefix, e.g. DevIfTest_20100222_103626_COM1_115200.txt. The file name contains a unique date & time stamp and an indicator of the communication port used.

A log file is created each time the data export communication is started (refer to chapter "Start" for more details how to start).

COM Speed

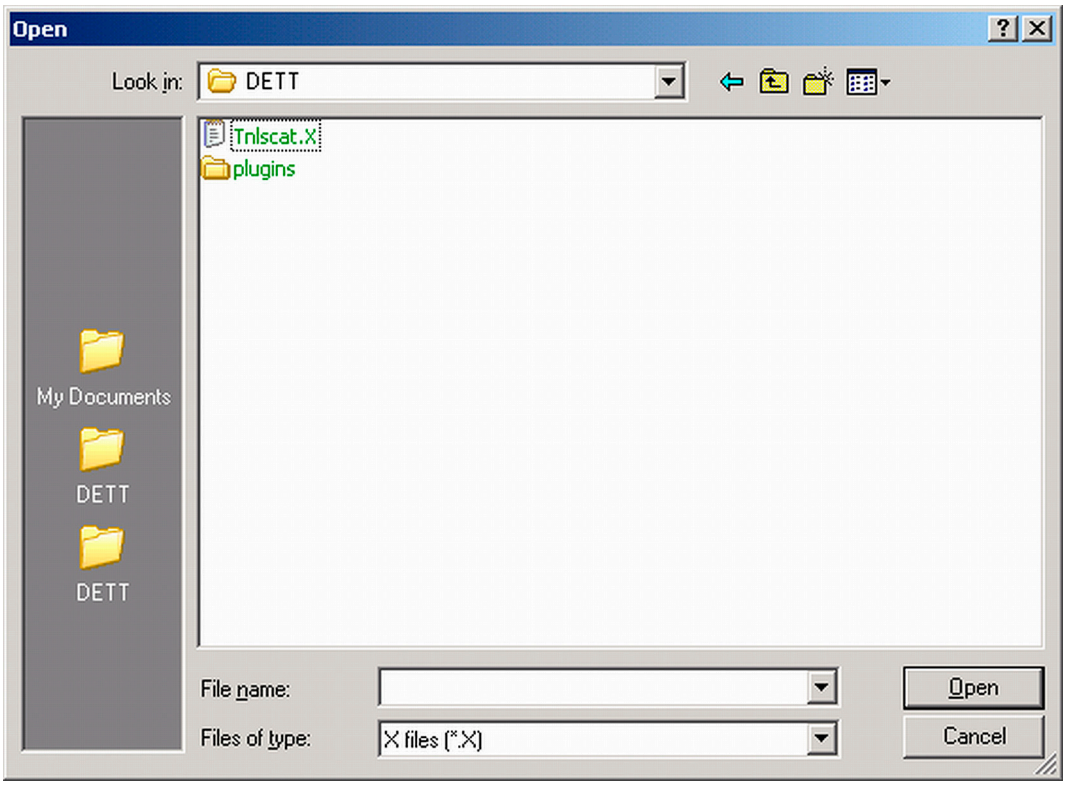
Select the required baud rate of the COM interface (19200 or 115200)

NLS

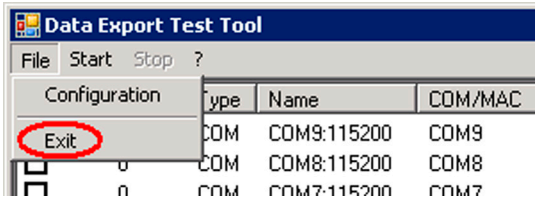
The NLS text catalog (Tnlscat.X) can be be imported to achieve full text compatibility between the DETT tool and the Monitor Rev. If the text string of transmitted data is incorrect, this might be solved by an upgrade of the NLS text catalog. For further information, please refer to the respective Service Documentation for the patient monitors.

The NLS text catalog is included on the IntelliVue Support Tool DVD or can be downloaded from Philips InCenter.

When clicking the "Import" button, a windows file browser menu opens and the Tnslcat.x file to be imported can be selected.



File -> Exit



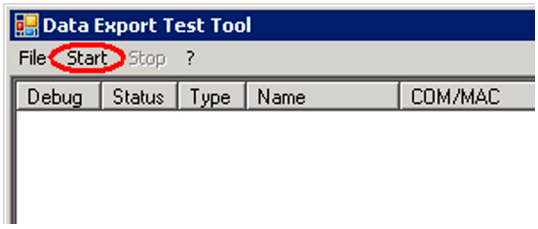
From the "File" file pull down menu select "Exit" to exit the DETT. This will terminate the program, including all open threads.

Start

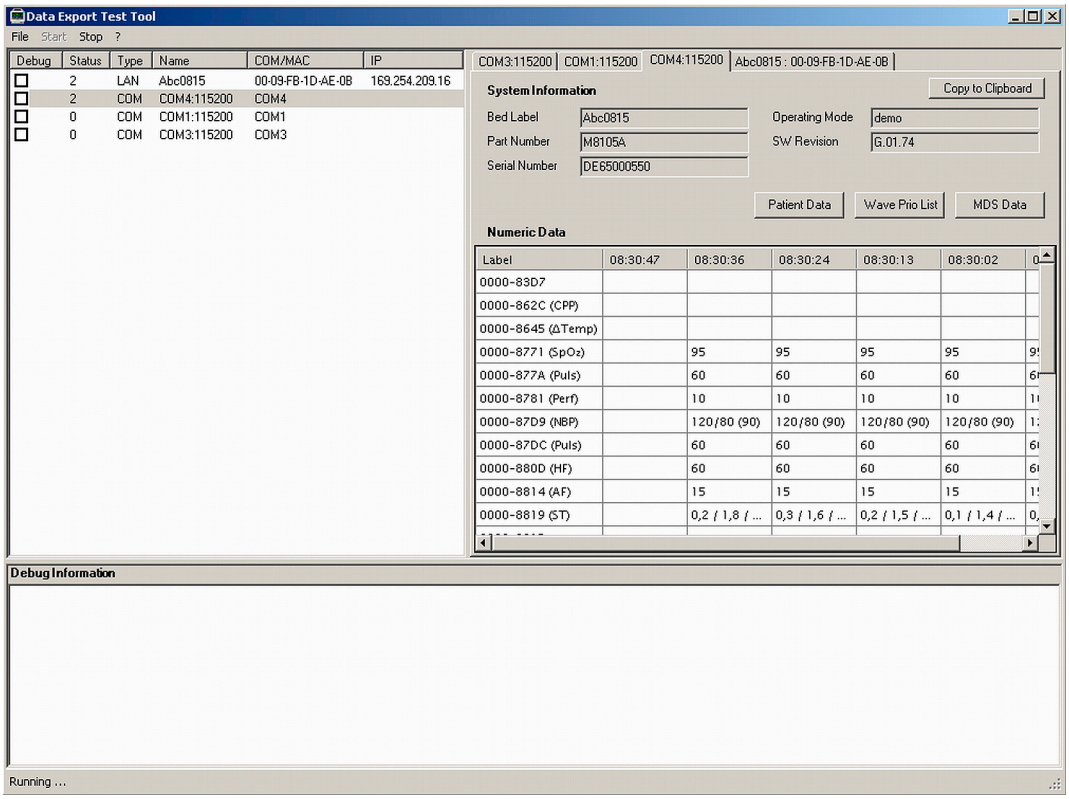
Ensure that you have connected the IntelliVue monitor to the PC, either via LAN (monitor must have IP address either via BootP server or manual configuration) or via RS-232.

When using the LAN interface of the PC without a BootP Server in the LAN network (e.g. direct LAN Connection), the PC must use a valid IP address within the same subnet as the IV.

To start the data export communication select "Start" from the Menu.



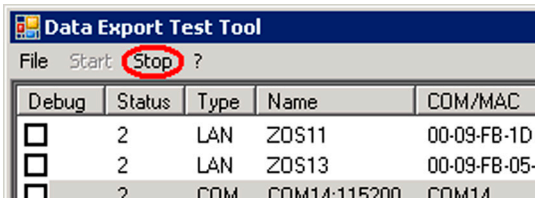
By selecting "Start" from the Menu, the DETT detects any available connected IntelliVue Patient Monitors and displays the received data in the numeric grid. Patient Monitors connected via LAN can take up to one minute to establish communication.



Stop

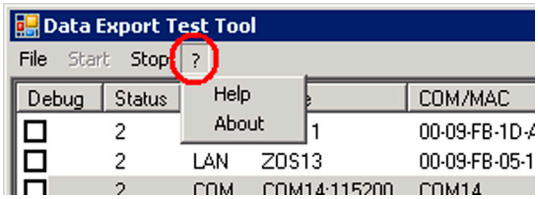
To stop the data export communication select "Stop" from the Menu.

The connection to all monitors is terminated. Logging is stopped as well.



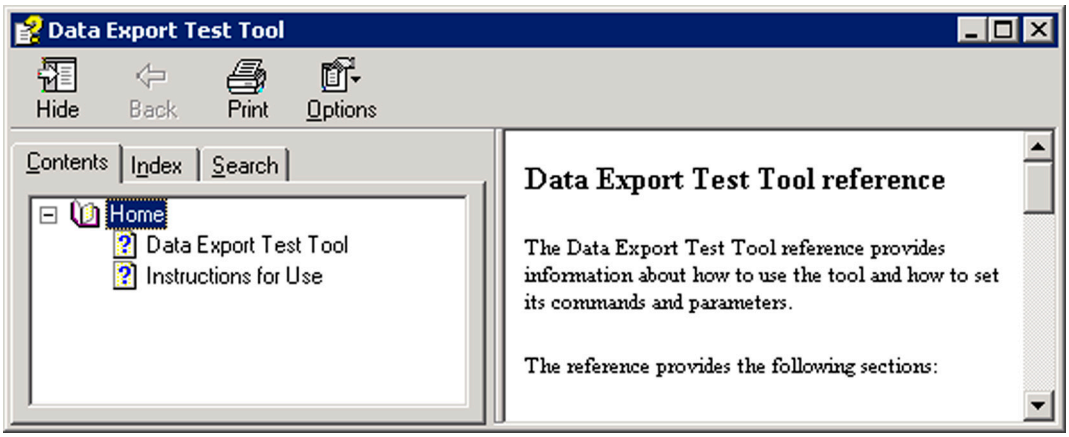
? -> Help/About

In the "?" pull down menu, "Help" and "About" can be accessed.



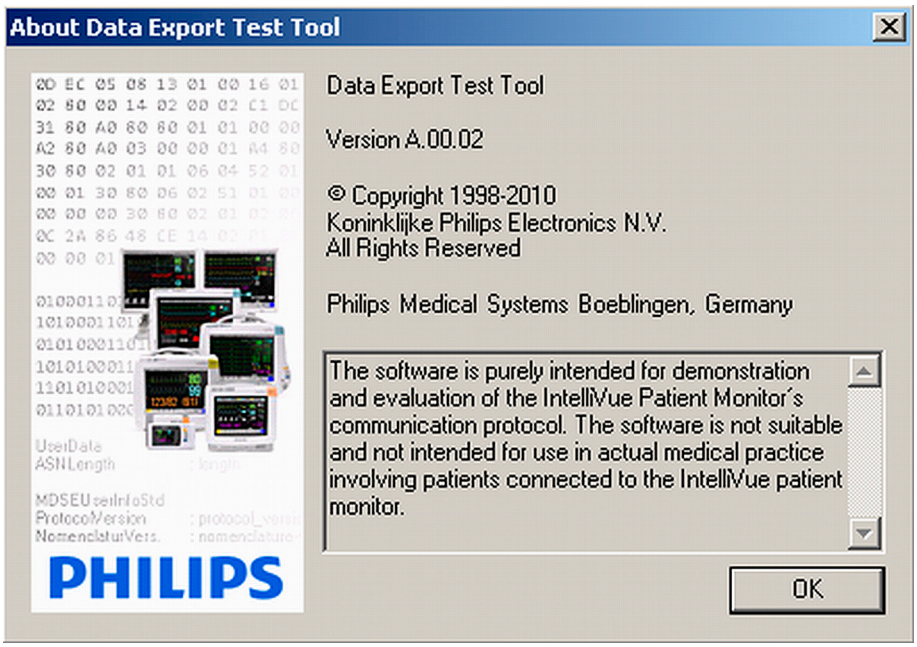
Help

Select "Help" to open the main help file.



About

Select "About" to open the About box. The picture below shows an example of the "About" box. To exit the About box select "OK".



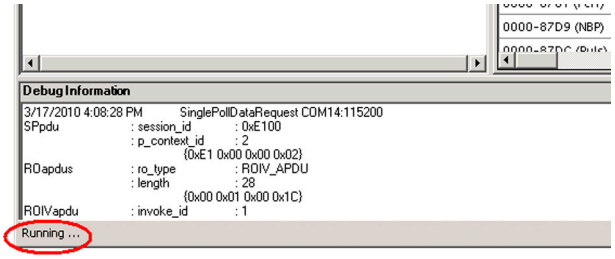
Status Strip

The Status Strip shows the current status of the DETT. The following status messages are displayed:

1 Ready
DETT is launched and ready to be started

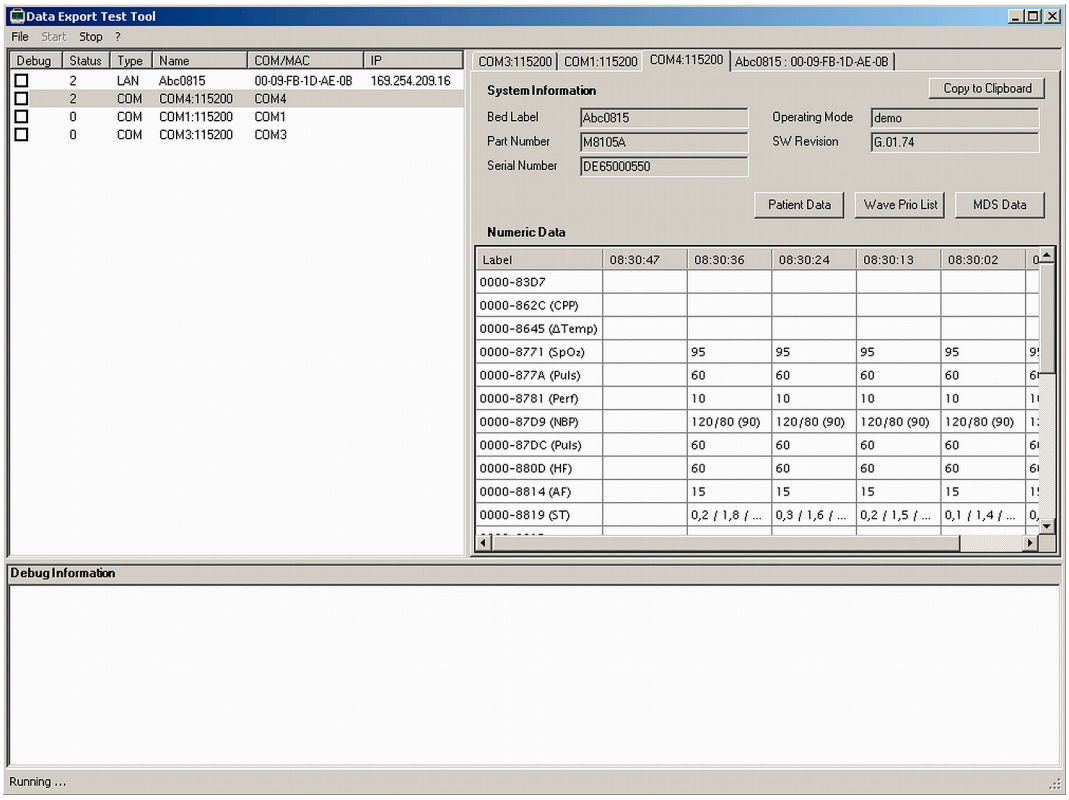
2 Running
DETT has been started and is communicating

3 Stopped
DETT has been stopped

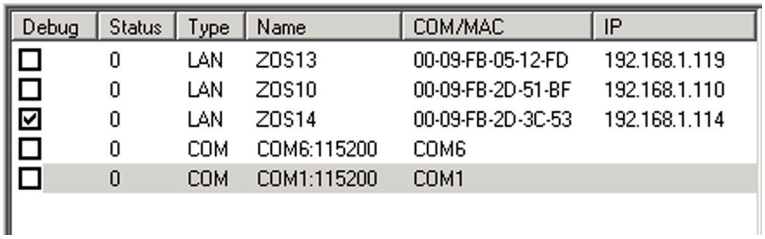


System List Window

After starting the DETT, the data export communication of the available patient monitor systems is displayed in the system list window.



The system window provides the following information / selections.



Debug

This check box enables or disables the debugging feature of the data export protocol. For further details refer to chapter "The debug Information".

Status

The status of the connected patient monitoring system is displayed. The following states are possible:

0 – Not connected (either LAN or COM)

1 – Connect indication request for the LAN interface. The Connect Indication message is only available on the LAN interface. As soon as the IntelliVue monitor has received a valid IP address from the BOOTP server in the network, the monitor sends out the Connect Indication message of its LAN interface.

2 – Association Request accepted. To establish a logical connection, the Computer Client sends the Association Request message to the IntelliVue monitor. The IntelliVue monitor processes the Association Request and sends an Association Result.

Type

The type of data export connection is displayed: Either **LAN** (IEEE802.3 10BaseT (10MBit/s) Local Area Network) or **COM** (RS-232 or RS-232 via USB adapter interface or "RS-232 over LAN adapter").

Name

The Associated Name of the patient monitor system or the Interface is displayed.

LAN: If the connected patient monitor uses a label it will be displayed.

COM: The respective COM Port No. together with the interface speed will be displayed, e.g. COM1:115200 (COM1 with 115,200 speed)

COM/MAC

LAN: MAC Address of the IntelliVue patient monitor

COM: Assigned COM Interface number of the PC

IP

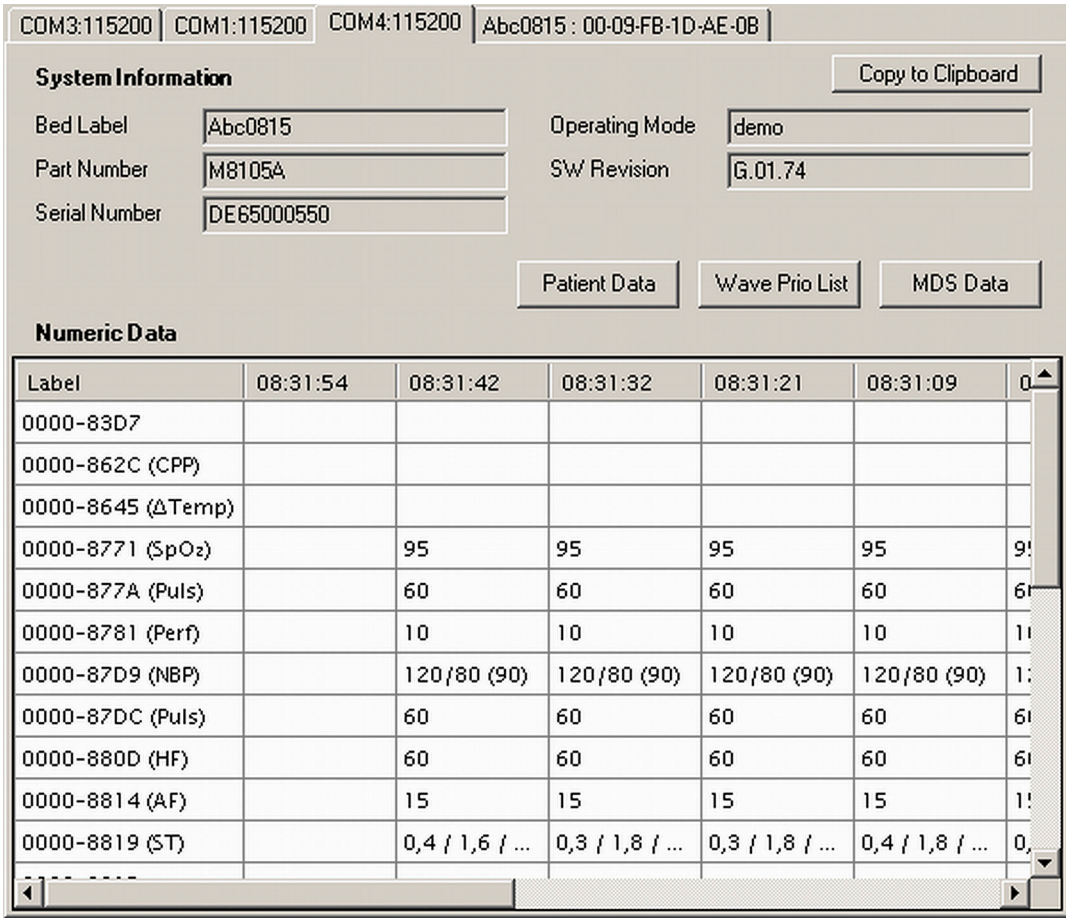
IP Address assigned to the LAN Interface of the IntelliVue patient monitor.

System Detail Window

The System Detail Window consists of several parts. Per detected patient monitor, a tab is added to the System Detail Window. The respective tab can be identified by the monitor label, the COM label or an empty tab. It can be selected by a left mouse click on the tab area.

A tab displaying a monitor label might contain the LAN interface MAC address.

A tab displaying the associated COM port might contain the link speed.



Label	08:31:54	08:31:42	08:31:32	08:31:21	08:31:09	0
0000-83D7						
0000-862C (CPP)						
0000-8645 (ΔTemp)						
0000-8771 (SpO2)		95	95	95	95	9
0000-877A (Puls)		60	60	60	60	6
0000-8781 (Perf)		10	10	10	10	1
0000-87D9 (NBP)		120/80 (90)	120/80 (90)	120/80 (90)	120/80 (90)	1
0000-87DC (Puls)		60	60	60	60	6
0000-880D (HF)		60	60	60	60	6
0000-8814 (AF)		15	15	15	15	1
0000-8819 (ST)		0,4 / 1,6 / ...	0,3 / 1,8 / ...	0,3 / 1,8 / ...	0,4 / 1,8 / ...	0,

Each tab consists of the system information, which contains the general details of the selected patient monitor, sub-menu buttons and a grid displaying numeric data if available.

The following information is displayed within a tab:

Bed label – displays the associated bed label of the patient monitor (if available), e.g. Z0S14

Part number – displays the Product Number of the patient monitor, e.g. M8105A

Serial number – displays the Serial Number of the patient monitor, e.g. DE70403305

Operation mode – displays the Operation mode of the patient monitor, e.g. Demo mode

SW Rev. – displays the Software Revision of the patient monitor, e.g. G.01.74

NOTE

If the grid exceeds 256 columns, the content is written to a file in the execution directory of DETT. Within the grid, columns are handled first in first out (FIFO).

Selectable Buttons within a Tab

Copy to Clipboard

When selecting copy to clipboard, the system details (system information and numeric data) will be copied to a clipboard. This allows export of data into e.g. MS Excel.

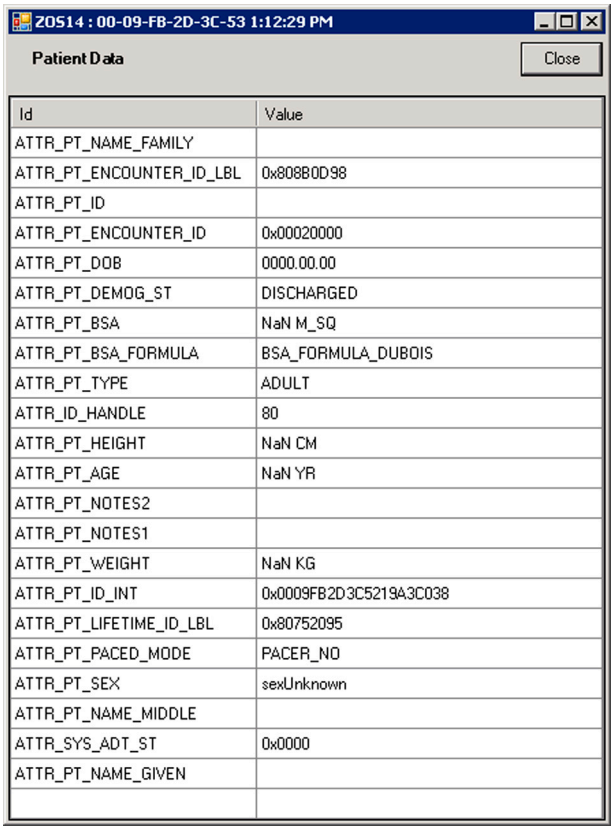
```
ZOS14 : 00-09-FB-2D-3C-53
Bed Label             ZOS14
Area Application      AREA_INTENSIVE_CARE
Status                OPERATING
Operating Mode        demo

Label                 1:15:25 PM                              1:15:33 PM
0000-83D7
0000-862C (CPP)
0000-8645 (?Temp)
0000-8771 (SpO2)      95                                      95
0000-877A (Puls)      60                                      60
0000-8781 (Perf)      10                                      10
0000-87D9 (NBP)       120/80 (90)                             120/80 (90)
0000-87DC (Puls)      60                                      60
0000-880D (HF)        60                                      60
0000-8814 (AF)        15                                      15
0000-8819 (ST)        0.2 / 1.4 / 1.2 / -0.8 / -0.4 / 1.3     0.2 / 1.4 / 1.2 / -0.8 / -0.4 / 1.3
                      / -0.1 / 0 / 0.6 / 1.1 / 1.4 / 1        / -0.1 / 0 / 0.6 / 1.1 / 1.4 / 1
0000-881F
0000-8821 (STindx)
0000-8824 (VES)       0                                       0
0000-8831 (QT)
0000-8833 (QTc)
0000-8835 (?QTc)
0000-8837 (QT-HF)
0000-883B
0000-883D
```

The following details are copied and transferred to a spreadsheet.

- Associated Name of the patient monitor system or the Interface.
- Bed label
- MAC Address (LAN connected monitor system)
- Area Application
- Status
- Operation Mode
- Label of the numeric attributes transmitted by the monitor device
- Respective value of numeric transmitted by monitor device
- System time (PC client time)

Patient Data

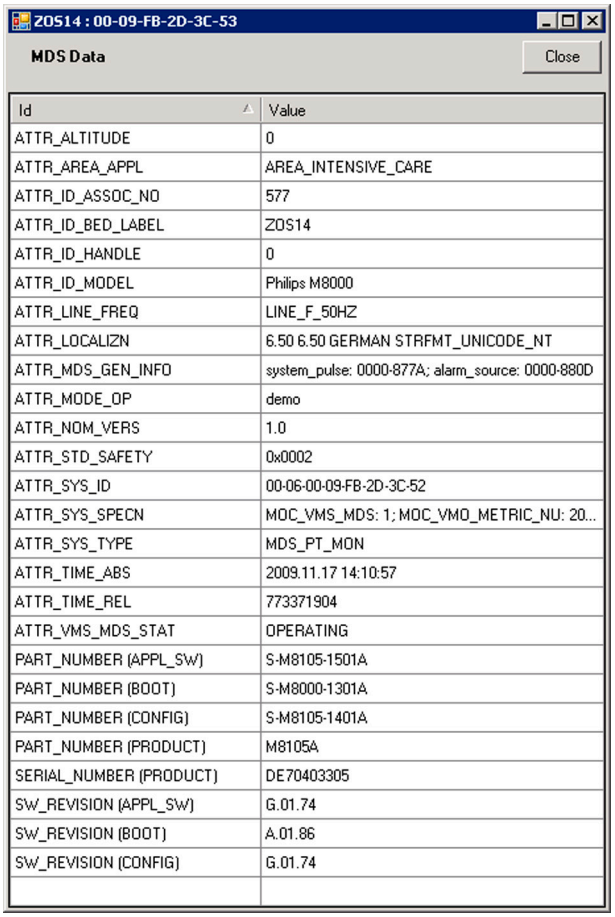
When selecting patient data, a new window will be opened displaying the patient data. Those details are not copied to the clipboard. For details on the ID attributes, refer to latest revision of the Data Export Interface Programming Guide.



Id	Value
ATTR_PT_NAME_FAMILY	
ATTR_PT_ENCOUNTER_ID_LBL	0x808B0D98
ATTR_PT_ID	
ATTR_PT_ENCOUNTER_ID	0x00020000
ATTR_PT_DOB	0000.00.00
ATTR_PT_DEMOG_ST	DISCHARGED
ATTR_PT_BSA	NaN M_SQ
ATTR_PT_BSA_FORMULA	BSA_FORMULA_DUBOIS
ATTR_PT_TYPE	ADULT
ATTR_ID_HANDLE	80
ATTR_PT_HEIGHT	NaN CM
ATTR_PT_AGE	NaN YR
ATTR_PT_NOTES2	
ATTR_PT_NOTES1	
ATTR_PT_WEIGHT	NaN KG
ATTR_PT_ID_INT	0x0009FB2D3C5219A3C038
ATTR_PT_LIFETIME_ID_LBL	0x80752095
ATTR_PT_PACED_MODE	PACER_NO
ATTR_PT_SEX	sexUnknown
ATTR_PT_NAME_MIDDLE	
ATTR_SYS_ADT_ST	0x0000
ATTR_PT_NAME_GIVEN	

MDS Data

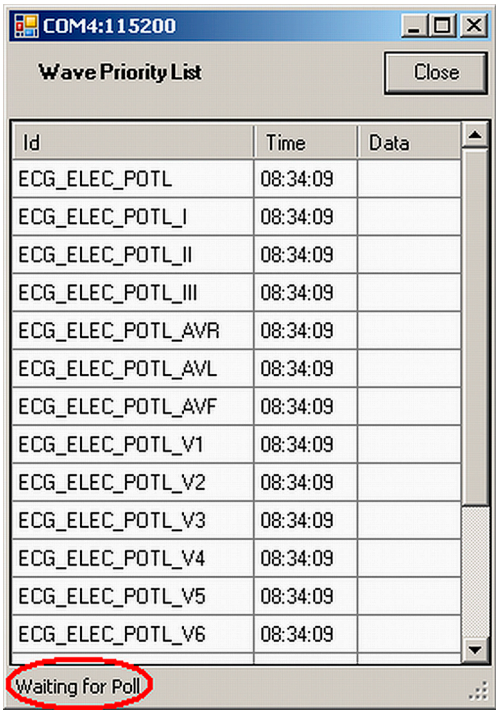
When selecting MDS data a new window will be opened displaying the connected patient monitor system details. For details on the ID attributes, refer to latest revision of the Data Export Interface Programming Guide.

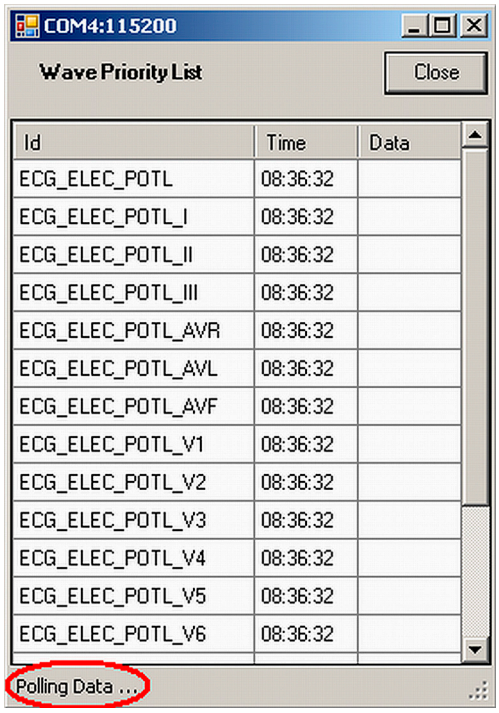


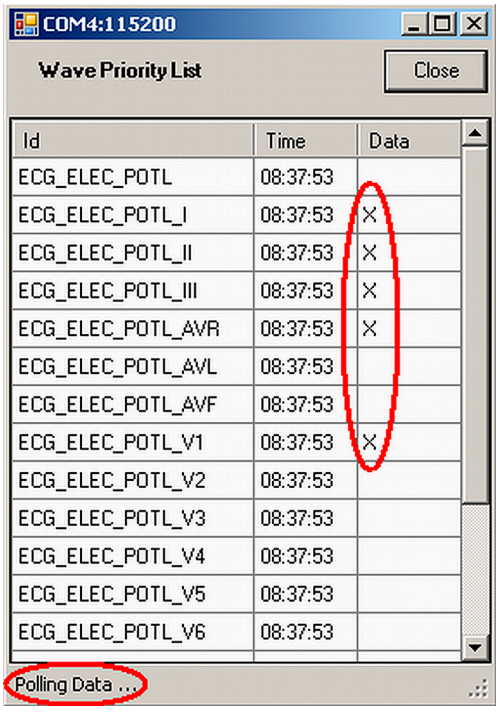
Id	Value
ATTR_ALTITUDE	0
ATTR_AREA_APPL	AREA_INTENSIVE_CARE
ATTR_ID_ASSOC_NO	577
ATTR_ID_BED_LABEL	ZOS14
ATTR_ID_HANDLE	0
ATTR_ID_MODEL	Philips M8000
ATTR_LINE_FREQ	LINE_F_50HZ
ATTR_LOCALIZN	6.50 6.50 GERMAN STRFMT_UNICODE_NT
ATTR_MDS_GEN_INFO	system_pulse: 0000-877A; alarm_source: 0000-880D
ATTR_MODE_OP	demo
ATTR_NOM_VERS	1.0
ATTR_STD_SAFETY	0x0002
ATTR_SYS_ID	00-06-00-09-FB-2D-3C-52
ATTR_SYS_SPECN	MOC_VMS_MDS: 1; MOC_VMO_METRIC_NU: 20...
ATTR_SYS_TYPE	MDS_PT_MON
ATTR_TIME_ABS	2009.11.17 14:10:57
ATTR_TIME_REL	773371904
ATTR_VMS_MDS_STAT	OPERATING
PART_NUMBER (APPL_SW)	S-M8105-1501A
PART_NUMBER (BOOT)	S-M8000-1301A
PART_NUMBER (CONFIG)	S-M8105-1401A
PART_NUMBER (PRODUCT)	M8105A
SERIAL_NUMBER (PRODUCT)	DE70403305
SW_REVISION (APPL_SW)	G.01.74
SW_REVISION (BOOT)	A.01.86
SW_REVISION (CONFIG)	G.01.74

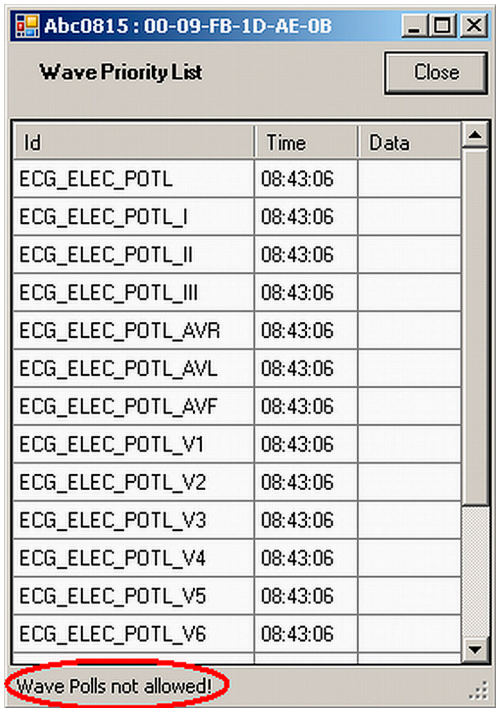
Wave Priority List

When selecting the Wave priority list, a new window will be opened displaying the current available Wave parameters and data transmission. For details on the ID attributes, refer to latest revision of the Data Export Interface Programming Guide.









The "X" mark in the column "Data" indicates the wave data transmission for the respective wave parameter.

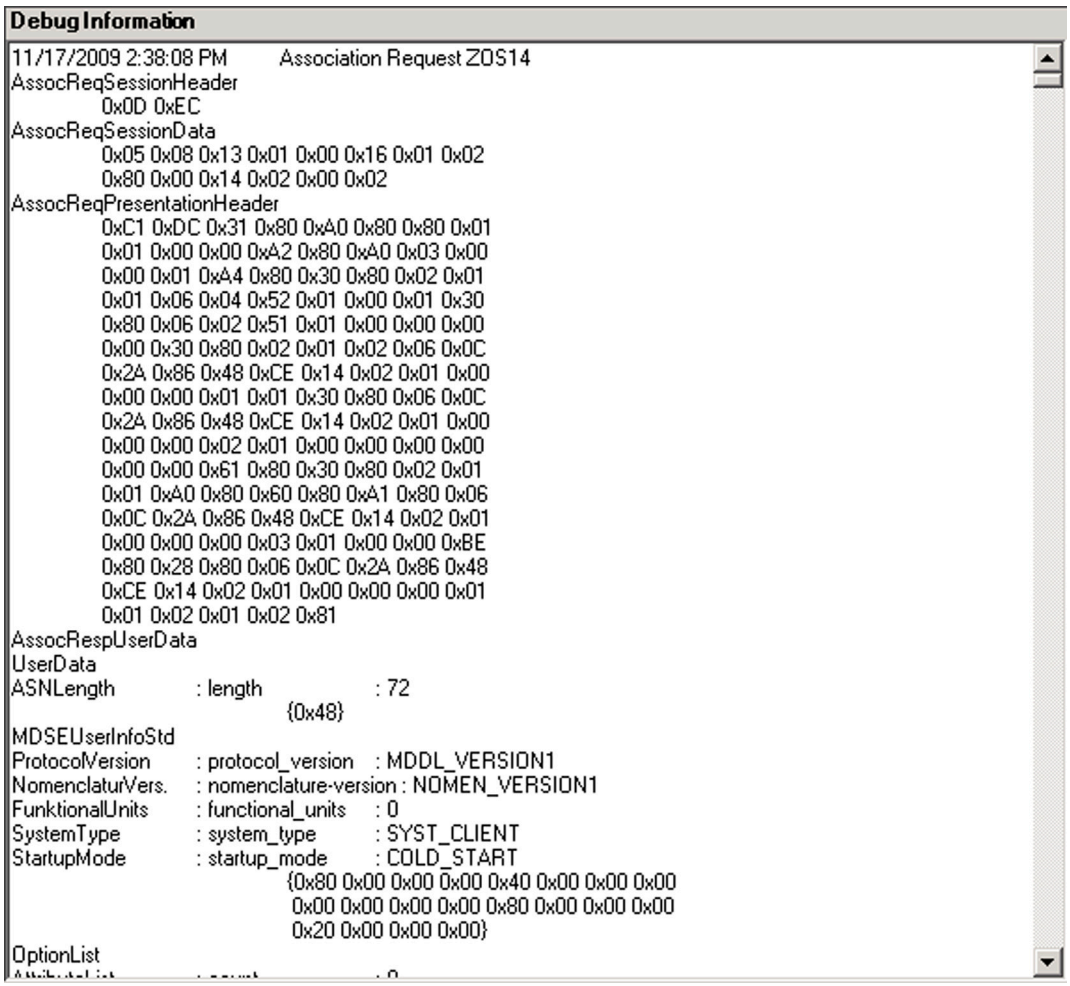
NOTE

IntelliVue Rev. G.0 or higher allows the configuration of either a second MIB/RS232 port or the combination LAN interface and MIB/RS232 port for Data Export. The DtOut2 driver is used to connect a second port to Data Export. Only one connection is able to request wave data at a time, the other connection responds with a notification that wave polling is not possible.

Debug Information Window

If the debug mode for one or more detected and available patient monitors is selected debug details are displayed in this window. Refer to chapter "the Menu" for further details on how to enable / disable the debug mode.

The presentation of the data reflects the format described in the current revision of the Data Export Interface Guide.



Within the debug information window the displayed strings can be selected by highlighting and copied to a clipboard. This allows export of data into e.g. MS Excel, Word etc.

The displayed data can be deleted within the debug information window by highlighting it and using the Windows delete feature. By pressing "CTRL +A" all information in the debug information window field can be selected for further processing.

Log Files

The communication between the DETT and the Patient Monitor is logged in the selected log path. A log file is created each time the data export communication is started (refer to chapter "Start" for more details on how to start).

The file name is built in one of the following ways:

1 Monitor connected to LAN Interface:
DevIfTest_<Date>_<Time>_<Bed Label>_<MAC Addr>.txt

2 Monitor connected to COM Interface:
DevIfTest_<Date>_<Time>_<COM No.>_<Baud rate>.txt

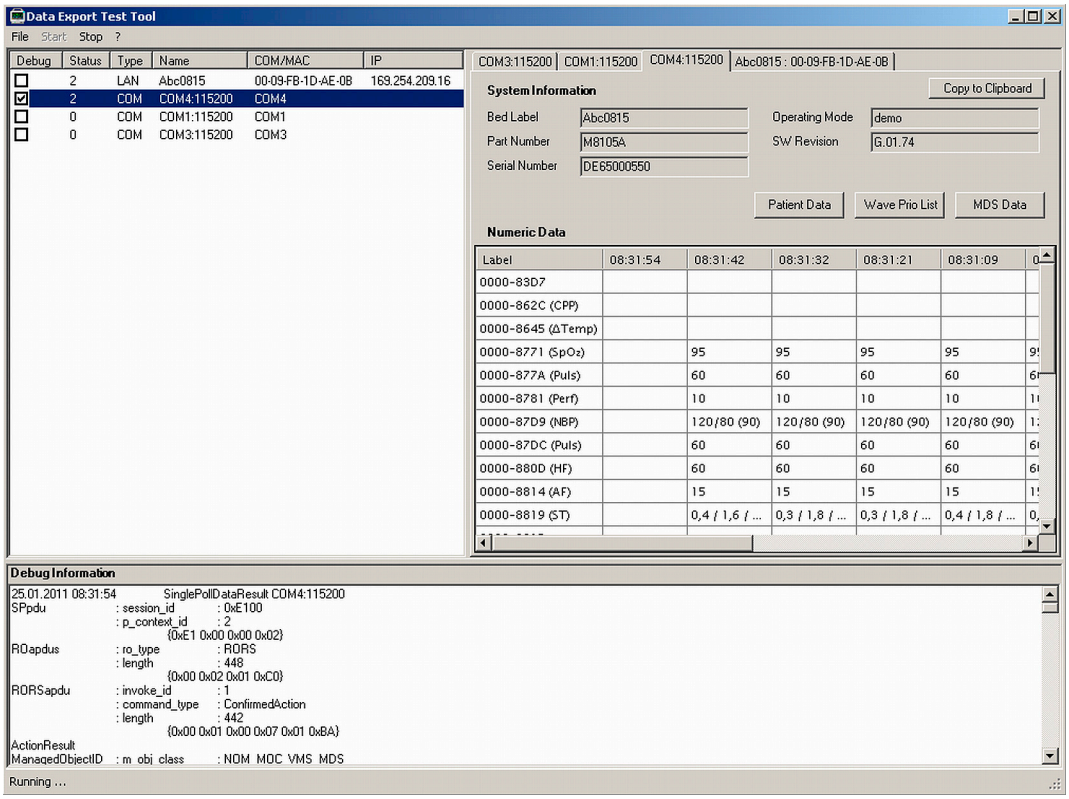
The log files contain the communication data in hexadecimal code. Each data package is preceded by a header with a time stamp and a communication type as shown in the following example:

```
11/17/2009 2:16:38 PM ConnectIndicationEvent
ZOS14

00 00 01 00 00 01 01 C2 00 00 00 00 01 BC 00 23
00 00 00 00 00 01 22 00 0D 17 01 AE 00 0B 01 AA
•••
31 30 09 28 00 14 00 08 50 68 69 6C 69 70 73 00
00 07 4D 38 31 30 35 41 00 00


11/17/2009 2:16:40 PM Association Request ZOS14

0D EC 05 08 13 01 00 16 01 02 80 00 14 02 00 02
C1 DC 31 80 A0 80 80 01 01 00 00 A2 80 A0 03 00
•••
00 0C F0 01 00 08 8C 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00


11/17/2009 2:16:40 PM Association Response ZOS14

0E CE 05 08 13 01 00 16 01 02 80 00 14 02 00 02
C1 BE 31 80 A0 80 80 01 01 00 00 A2 80 A0 03 00
•••
00 01 00 0C F0 01 00 08 84 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00


11/17/2009 2:16:40 PM MDS Create Event ZOS14

E1 00 00 02 00 01 01 1A 00 01 00 01 01 14 00 21
00 00 00 00 2F F4 DF 00 0D 06 01 06 00 21 00 00
•••
00 01 00 01 00 36 00 00 00 01 00 01 00 05 00 00
00 3C
```

```
11/17/2009 2:16:40 PM MDS Create Event Result
ZOS14

E1 00 00 02 00 02 00 14 00 01 00 01 00 0E 00 21
00 00 00 00 00 0A BD 00 0D 06 00 00


11/17/2009 2:16:40 PM Get Priority List Request
ZOS14

E1 00 00 02 00 01 00 16 00 00 00 03 00 10 00 21
00 00 00 00 00 00 00 00 00 01 00 02 F2 3A


11/17/2009 2:16:40 PM Get Priority List Response
ZOS14

E1 00 00 02 00 02 00 54 00 00 00 03 00 4E 00 21
00 00 00 00 00 01 00 44 F2 3A 00 40 00 0F 00 3C
•••
00 02 01 04 00 02 01 05 00 02 01 06 00 02 01 07
00 02 01 08 00 02 4B B4 00 02 50 00


11/17/2009 2:16:42 PM SinglePollDataRequest ZOS14

E1 00 00 02 00 01 00 1C 00 01 00 07 00 16 00 21
00 00 00 00 00 00 00 00 0C 16 00 08 00 01 00 01
00 21 00 00


11/17/2009 2:16:43 PM SinglePollDataResult ZOS14

E1 00 00 02 00 02 01 C8 00 01 00 07 01 C2 00 21
00 00 00 00 0C 16 01 B8 00 01 2F F5 38 00 FF FF
•••
00 00 00 01 00 01 00 05 00 00 00 3C 09 48 00 04
00 01 00 00 09 37 00 08 06 32 06 32 00 02 00 0B
```

DETT overview example

The screen shot below shows the DETT with several connected patient monitors. In this example one device is selected for debugging. The parameter values are displayed in the System Information section and the data stream details are visible in the Debug Information section of the tool window.



How to connect a PC with DETT to an IntelliVue

The following chapter describes how to connect a PC using DETT to an IV or IV Network, either via LAN, LAN / RS-232 converter, RS-232 direct connection or USB/RS-232 adapter.

WARNING

All external devices in the patient vicinity must comply with IEC 60601-1:1988/A1:1991A2:1995 or EN 60601-1:1990/A1:1993/A2:1995. This applies also to all signal connections, entering the patient vicinity. Additional safety equipment, e.g. isolation transformers might be used.

The installation procedures e.g. for electrical connections as documented in the IntelliVue Instruction for Use must be strictly followed.

Connecting to an IntelliVue via a LAN Interface

Please refer to the current Revision of the IntelliVue Data Export Interface Programming Guide for details on how to set up and configure the LAN Interface.

Connecting to the IntelliVue MP20-90 MIB/RS232 Interface

Please refer to the current Revision of the IntelliVue Data Export Interface Programming Guide for details on how to setup and configure the MIB/ RS-232 Interface.

Connecting an IntelliVue Monitor LAN Interface by using a LAN/ RS232 converter

Please refer to the Instruction for Use of the LAN / RS-232 Converter in use for details on how to setup and configure a LAN / RS-232 conversion system. Then proceed as described in section "Connection of an IntelliVue monitor LAN interface"

Connecting an Intellivue Monitor MIB/RS232 Interface by using a USB / RS-232 Adapter

Please refer to the Instruction for Use of the MIB / RS-232 Adpapter in use for details on how to setup and configure the USB / RS-232 conversion system. Then proceed as described in section "Connection of an IntelliVue monitor MIB/RS-232 interface"

For further details on configuration, please refer to the IntelliVue configuration guide (M8000-9306X).

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