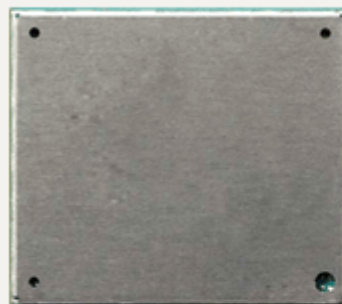


# Getting Started with Cinterion<sup>®</sup> PLS62-W

User Guide

Version: 01

DocId: PLS62-W\_startup\_guide\_v01



User Guide:	<b>Getting Started with Cinterion® PLS62-W</b>
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## 0 Document History

New document: "Getting Started with Cinterion® PLS62-W" Version 01

Chapter	What is new
---	Initial document setup.

# 1 Introduction

This document describes a ready-to-use development and test environment for the Cinterion® PLS62-W SMT modules.

The development and test environment comprises the following hardware components

- PLS62-W evaluation module (for supported products see [Section 1.1](#))  
The PLS62-W evaluation module consists of the actual PLS62-W SMT module soldered onto a PCB with a board-to-board connector and an U.FL antenna connector. For PLS62-W evaluation module board schematics see [Chapter 4](#).
- DSB75 Development Support Board  
The PLS62-W evaluation module needs to connect to an adequate host device such as the DSB75. A detailed DSB75 hardware interface description and operating instructions can be found in [\[3\]](#).
- DSB75 Adapter.  
The DSB75 Adapter is used to mount the PLS62-W evaluation module to the DSB75.

The purpose of this document<sup>1</sup> is to guide you through the process of connecting the hardware, installing the supplied drivers on a Microsoft® Windows 7 (or Windows 8) system and getting started with PLS62-W.

Note: The hardware components listed above as part of a development and test environment are also mentioned in [\[2\]](#) as part of the comprehensive reference equipment used by Gemalto M2M for type approval. For general development and test purposes however, there is alternative equipment available: The DSB75 may be replaced by the DSB-Mini (for details see [\[5\]](#)), the DSB75 Adapter by the Starter Kit B80, either plugged onto the DSB-Mini or as a stand-alone device (for more information see [\[6\]](#)).

## 1.1 Supported Products

This document applies to the following Gemalto M2M modules:

- Cinterion® PLS62-W

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<sup>1</sup> The document is effective only if listed in the appropriate Release Notes as part of the technical documentation delivered with your Gemalto M2M wireless module.

## 1.2 Related Documents

- [1] PLS62-W AT Command Set
- [2] PLS62-W Hardware Interface Description
- [3] DSB75 Development Support Board Hardware Interface Description
- [4] Java User's Guide
- [5] DSB-Mini User Guide
- [6] Starter Kit B80 User Guide

## 2 Getting Started with PLS62-W

### 2.1 Technical Requirements for Using PLS62-W Modules

- PLS62-W evaluation module<sup>2</sup>. For PLS62-W evaluation module schematics see [Appendix: Circuit Diagrams for Evaluation Module Board](#).
- PLS62-W USB driver package
- Computer running Windows 7 (or Windows 8), USB 2.0 High Speed compatible
- Local administrator privileges on the particular Windows computer to install and uninstall the drivers
- DSB75 Development Support Board (for details see [\[3\]](#))
- DSB75 Adapter required for mounting the evaluation module to the DSB75. For more information about the DSB75 Adapter please refer to [Appendix: DSB75 Adapter](#).
- Accessories:
  - Small 50 Ohms antenna adapter cables with SMT connectors to connect the U-FL connectors on the PLS62-W evaluation module to the U-FL connectors on DSB75 Adapter (e.g. a Hirose - Hirose cable such as delivered with each DSB75) - 1 for GSM/UMTS/LTE main antenna connection, 1 for UMTS/LTE Rx Diversity antenna connection.
  - External 50 Ohms RF antenna with SMA connector to connect the SMA connector on the DSB75 Adapter (e.g. a SMARTEQ MiniMag antenna such as delivered with each DSB75) - 1 for GSM/UMTS/LTE main antenna connection, 1 for UMTS/LTE Rx Diversity antenna connection.
  - 9 to 15 Volts power supply adapter applied at the DSB75 for powering up the DSB75 and the connected PLS62-W evaluation module (not supplied by Gemalto M2M)
  - RS-232 cables for the module's asynchronous serial interfaces ASC0 and ASC1 (not supplied by Gemalto M2M)
  - USB cable with mini-USB plug (not supplied by Gemalto M2M)
- Appropriate application for controlling the module from within a PC's operating system. For Windows, e.g. Windows Hyperterminal.

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<sup>2</sup>. For ordering information see [\[2\]](#).

## 2.2 Connecting the PLS62-W Evaluation Module to the DSB75

To properly connect the PLS62-W evaluation module and all accessories to the DSB75 please complete the steps listed below. The complete setup with the evaluation module mounted onto the DSB75 Adapter and the DSB75 Adapter connected to the DSB75 is shown in [Figure 2](#).

- Ensure that all jumpers and slide switches on the DSB75 are set to their default positions as shown in [Figure 1](#) and in [\[3\]](#).
- Attach the 80-pin header of the DSB75 Adapter to the 2x40-pin connector (X101/X202) located on the DSB75. Take gentle care that all pins are aligned correctly, then press down evenly on the adapter until it is firmly seated.
- Remove the knurled nuts from the DSB75 Adapter.
- Mount the PLS62-W evaluation module onto the 80-pin board-to-board connector X120 of the DSB75 Adapter.
- Fasten the knurled nuts to secure the module to the DSB75 Adapter.
- Use the small antenna cables to connect the U.FL GSM/UMTS/LTE main antenna connector and the U.FL UMTS/LTE Rx Diversity antenna connector on the PLS62-W evaluation module to the U.FL-R SMT connectors on the DSB75 Adapter:
  - for GSM/UMTS/LTE main antenna connect to X350
  - for UMTS/LTE Rx Diversity antenna connect to X352
- Screw the external antennas to the appropriate SMA connectors on the DSB75 Adapter:
  - GSM/UMTS/LTE main antenna to X353
  - UMTS/LTE Rx Diversity antenna connect to X351
- Insert the SIM card into the card reader located at the DSB75 Adapter.  
Note: Do not use the SIM card reader of the DSB75 Support Board.
- To employ the module's USB interface, plug the USB 2.0 Mini-B5 connector of the USB cable to the Mini-B5 USB jack at the DSB75 Adapter. The other end of the USB cable connects to a Windows PC.  
Note: Do not use the USB connector located on the DSB75 Support Board.
- To employ the module's asynchronous serial interfaces ASC0 and/or ASC1, connect the 9-pin SubD connectors on the DSB75 to the PC's UART COM ports using the RS-232 cables. Use COM1 (X201) for the first serial interface ASC0 and/or COM2 (X202) for second serial interface ASC1.
- Make sure that the power supply adapter delivers a minimum of 12 Volts, and connect the power cables to the red (X400 = BATT+) and black (X401 = Ground) connectors of the DSB75 Support Board.

After connecting the PLS62-W evaluation module to the DSB75, the module can be switched on. The initial startup and possible USB driver installation are described in [Section 2.3](#).



2.2 Connecting the PLS62-W Evaluation Module to the DSB75

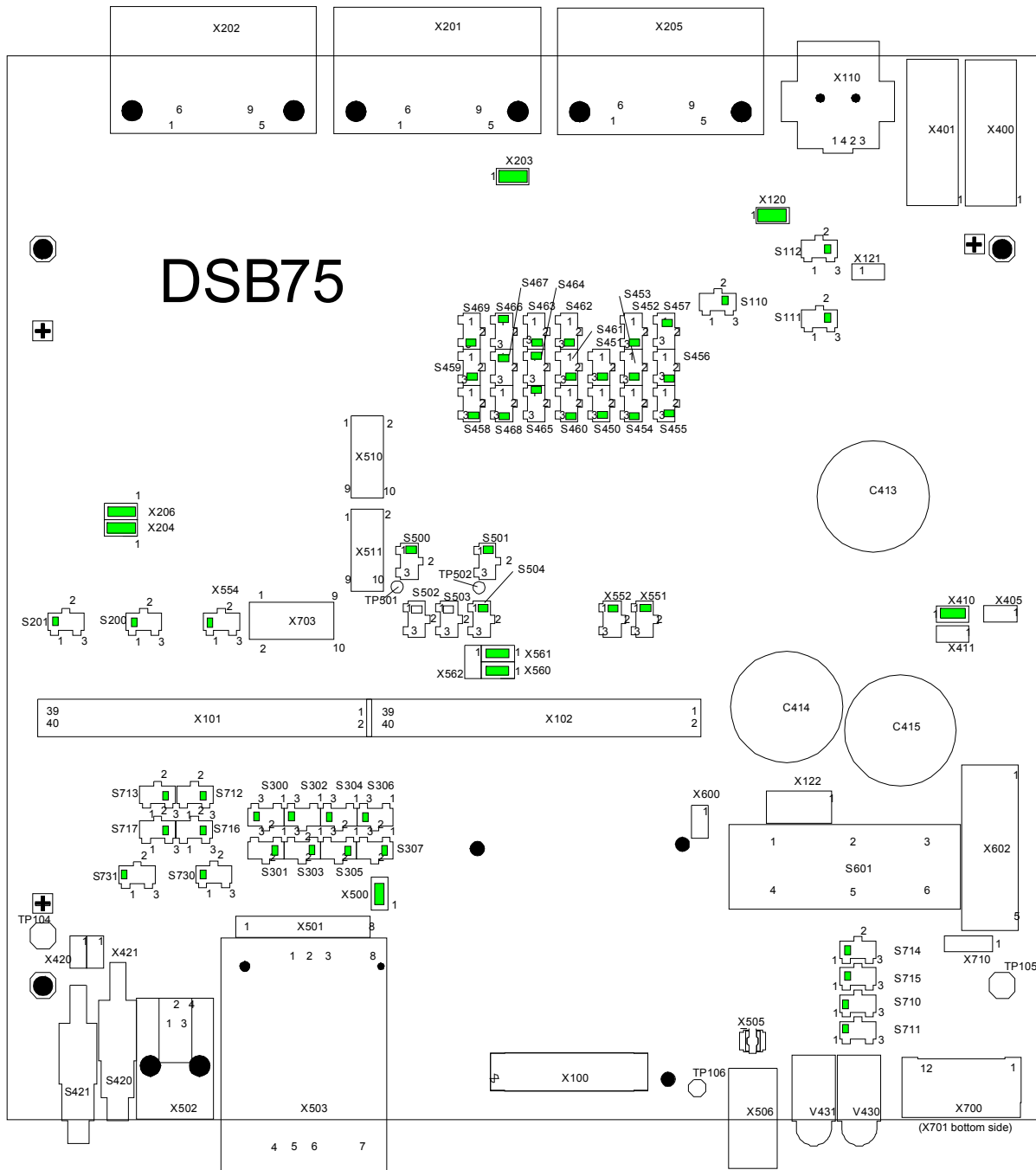


Figure 1: DSB75 configuration

2.2 Connecting the PLS62-W Evaluation Module to the DSB75

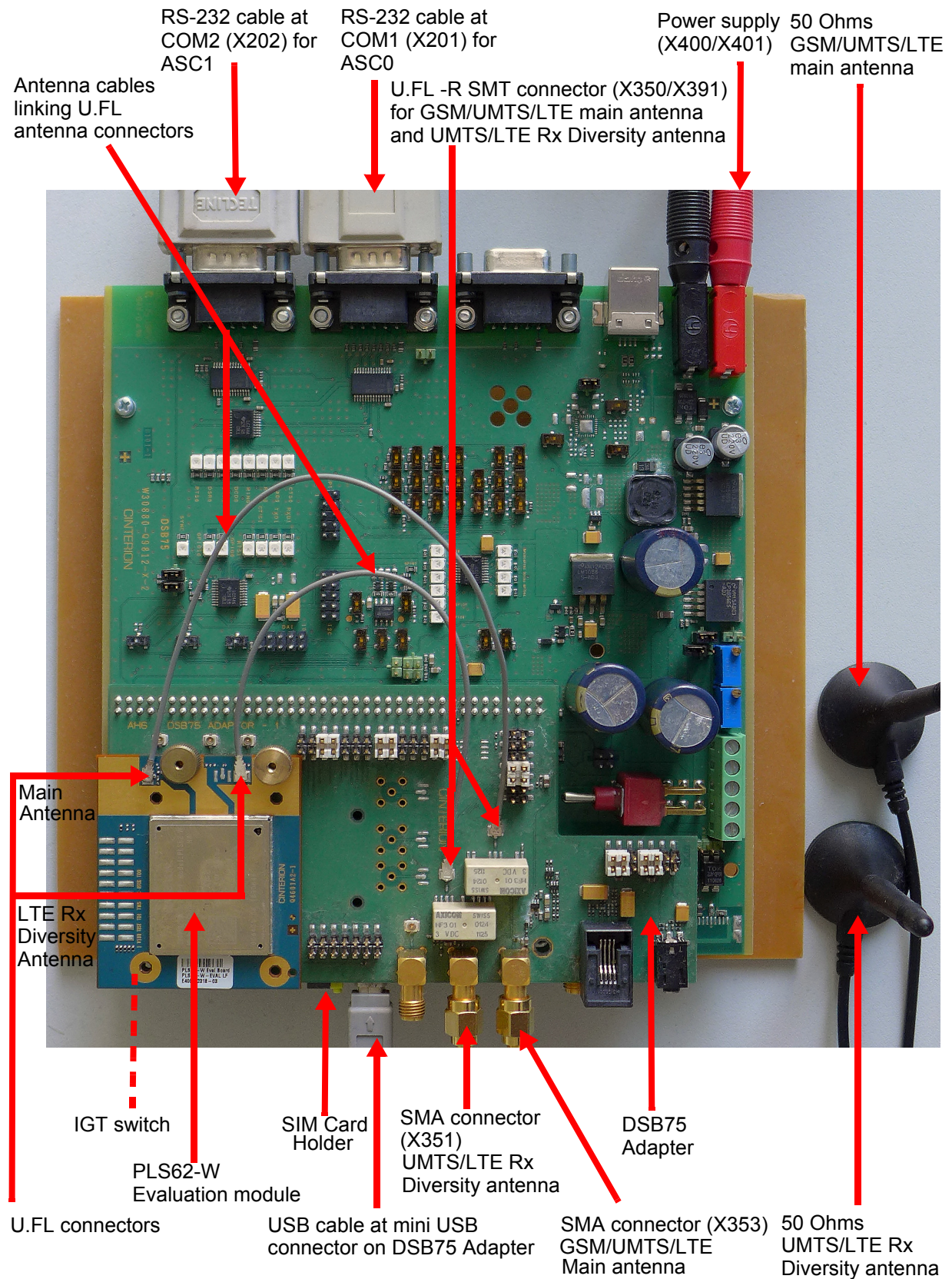


Figure 2: Module mounted onto DSB75 Adapter and connected to DSB75

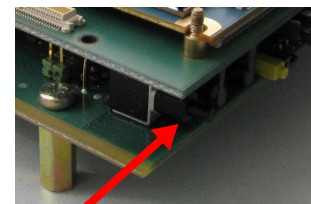
## 2.3 Start Up the Module

After connecting the PLS62-W evaluation module to the DSB75 as described in [Section 2.2](#), the module can be switched on.

**Note:** If the USB interface is to be employed, the USB drivers provided by Gemalto M2M need to be available. Copy the supplied driver files to a folder on the Windows computer. Be sure to use the latest USB driver software supplied by Gemalto M2M.

Also, if the module's Java functionality is to be employed, the Cinterion Mobility Toolkit (CMTK) as distributed on the Java CD install package needs to be installed. For more information on the CMTK (including installation) please refer to [\[4\]](#).

- Start the Windows PC.
- Press the ignition switch S421 on the DSB75. The ignition switch is located on the component side of the DSB75 as shown in [Figure 2](#).
- If the USB cable was plugged as described above, and the USB drivers provided by Gemalto M2M were not yet installed on the computer, you will be prompted to install them:
  - On Windows 7 (or Windows 8), wait a few seconds until all USB devices show up in the Windows Device Manager under "Other devices" as devices without installed drivers. Then - from top to bottom - right-click each "ELsX" device, select the option "Update Driver Software...", browse to the folder you copied the Gemalto USB drivers to, and select this folder to update the driver software from.
  - In any case, cancel any Windows instructions to update the software automatically. For each USB device take care to browse to the folder containing the unzipped driver software.



IGT switch

After successful USB driver installation the installed USB devices are listed in the Windows Device Manager under "Modems", "Network adapters", and "Ports (COM & LPT)" as shown in [Figure 3](#).

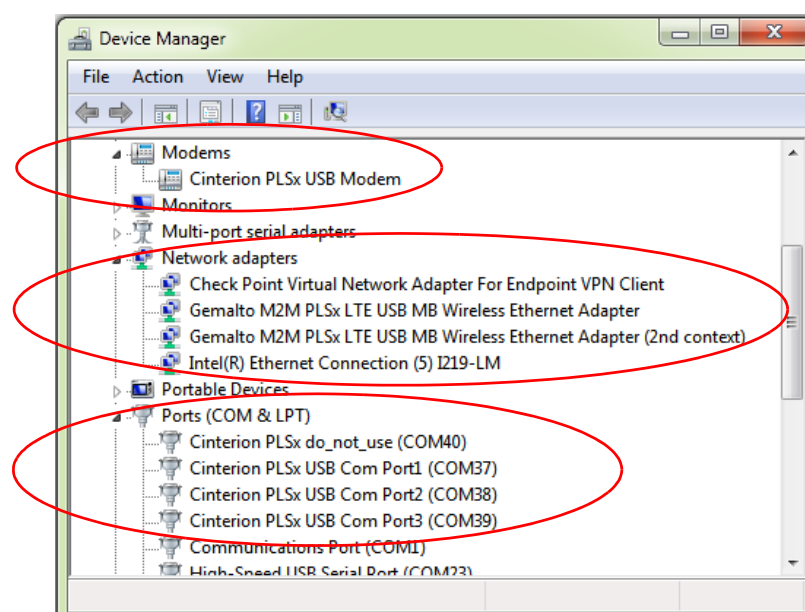


Figure 3: Installed USB devices

## 2.3 Start Up the Module

- To connect to the PLS62-W evaluation module via USB interface, check the properties of the enumerated USB devices for the configured COM ports, for example the "Cinterion PLSx USB Modem", call a terminal program on the PC and connect to the configured COM port. Type the AT command ATI to display module identification information.

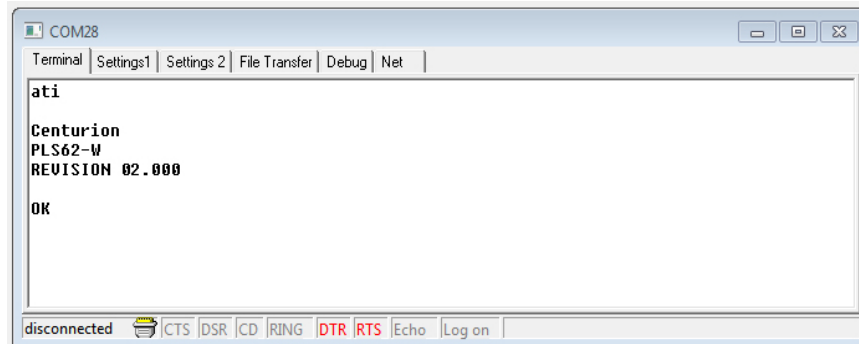


Figure 4: Connection via USB interface (USB modem)

- To connect to the PLS62-W evaluation module via asynchronous serial interface, for example ASC0, check for the port that is connected to the DSB75's COM1 X201 via RS-232 cable, call a terminal program on the PC and connect to the PLS62-W evaluation module using the following initial settings:
  - Bits per seconds: 115200
  - Data bits: 8
  - Parity: None
  - Stop bits:1
  - Flow control: HardwareType the AT command ATI to display module identification information.

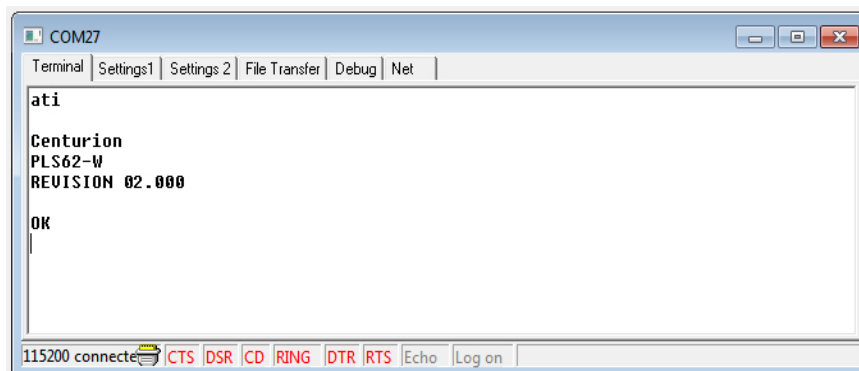


Figure 5: Connection via ASC0 interface

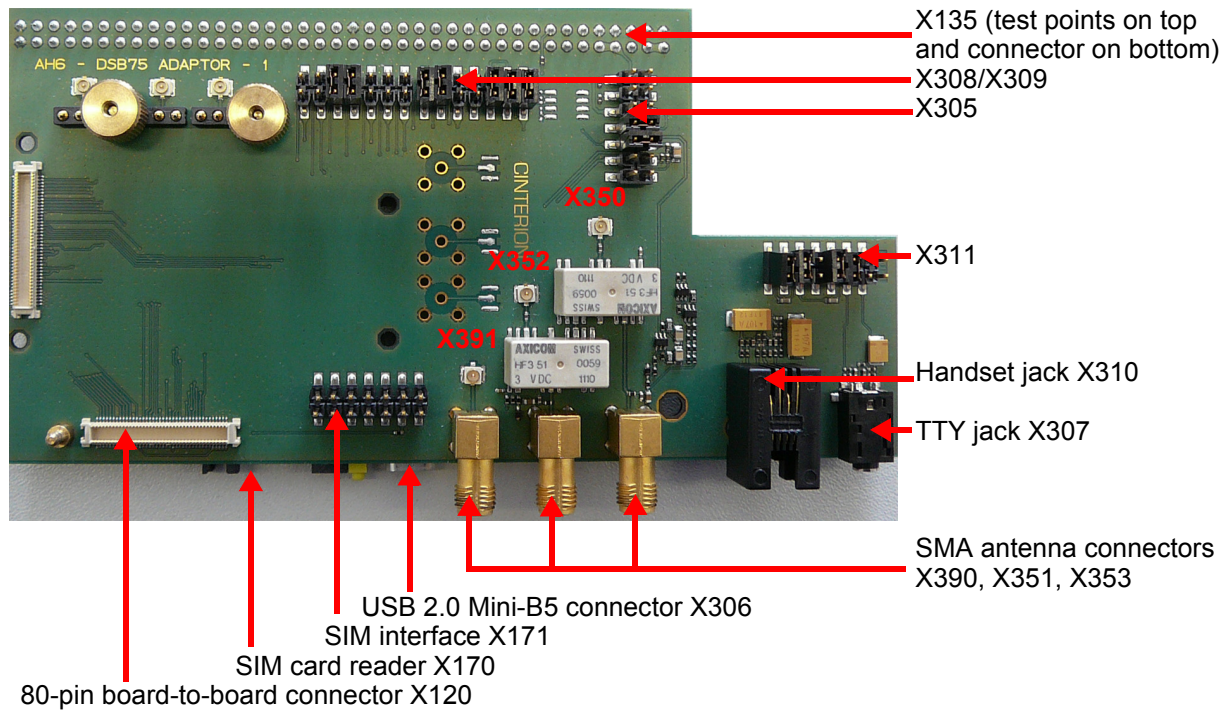
For a complete AT Command Set description see [\[1\]](#). This includes AT commands to configure the communication interfaces.

### 3 Appendix: DSB75 Adapter

The PLS62-W Evaluation Module connects to the 80-pin board-to-board connector X120 on top of the DSB75 Adapter. The 2x40-pin header X101/X102 of the DSB75 Support Board connects to the 80-pin female connector X135 located on the back of the DSB75 Adapter.

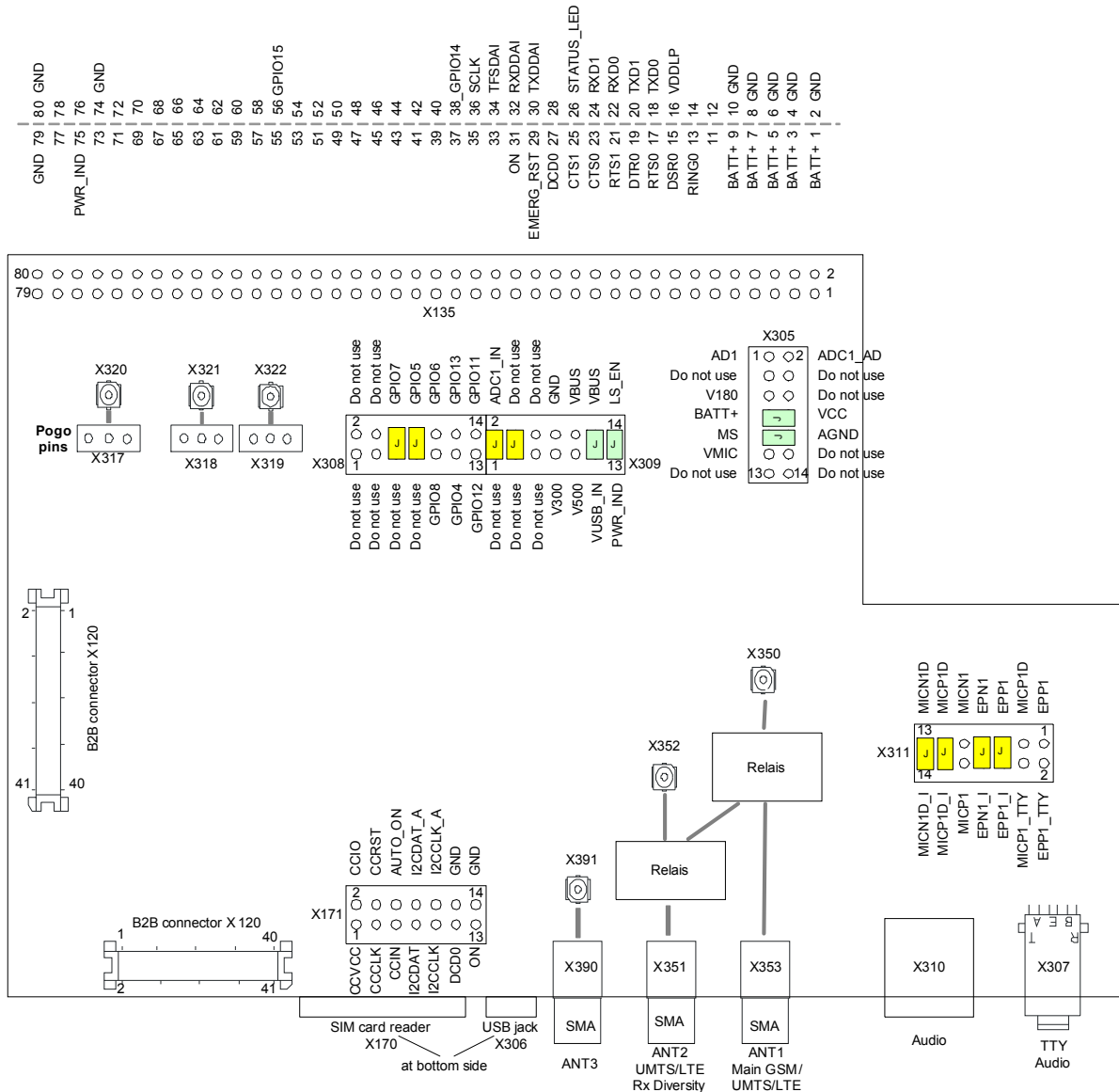
By default, when shipped from factory, all jumpers on the DSB75 Adapter are set for use with PLS62-W, even though not all of them are required - see [Figure 7](#).

The adapter is illustrated in [Figure 6](#) and [Figure 7](#).



**Figure 6:** DSB75 Adapter with default jumper positions

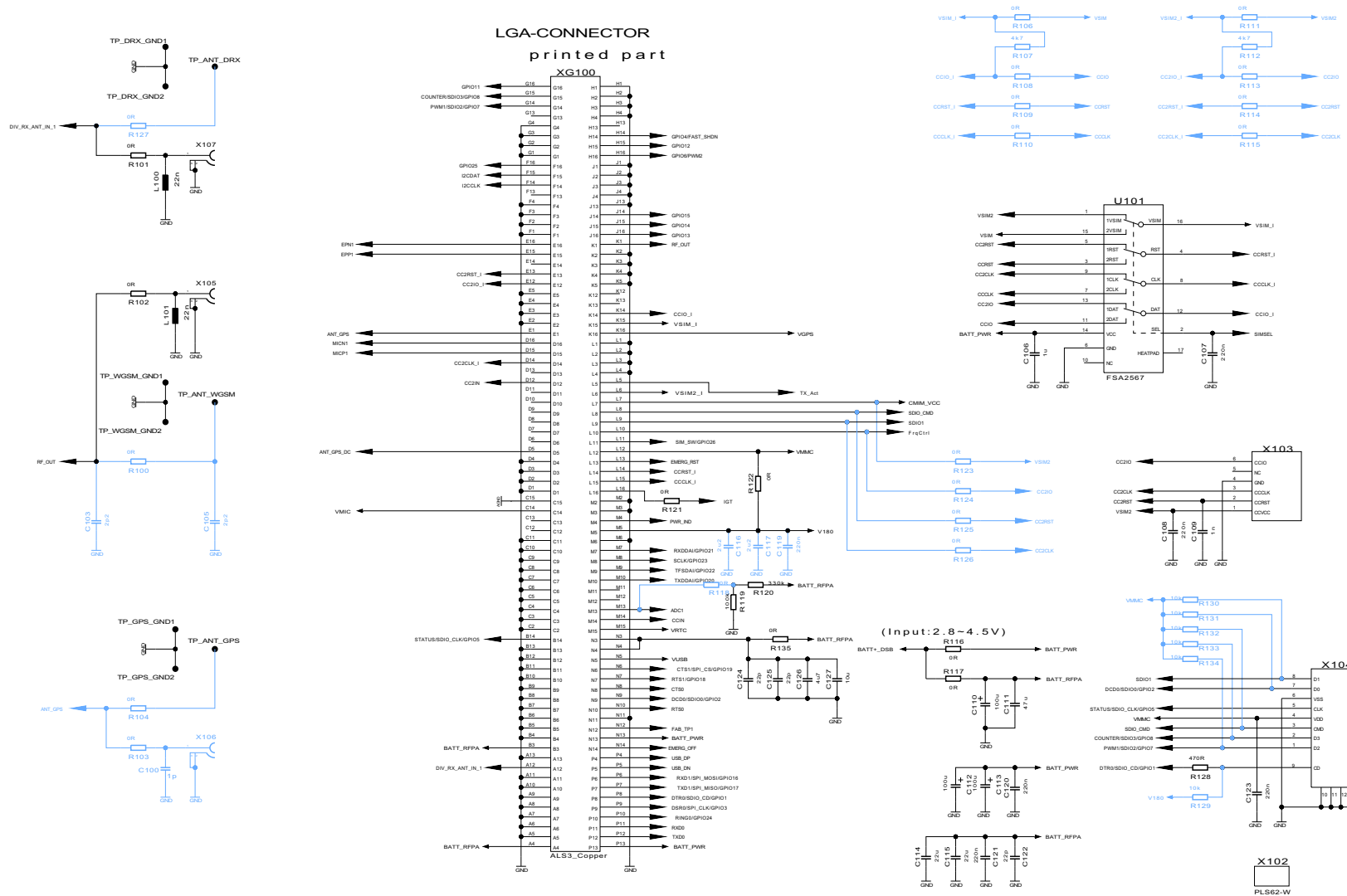
3 Appendix: DSB75 Adapter



**Note:** Default jumpers marked yellow at X308/X309/X311 are not required for PLS62-W.

**Figure 7:** DSB75 Adapter - connectors, jumpers

# 4 Appendix: Circuit Diagrams for Evaluation Module Board



**Note:** Circuit elements marked blue are not (yet) populated on the PLS62 evaluation module boards, and thus reserved for future use.

Figure 8: Schematic sheet 1

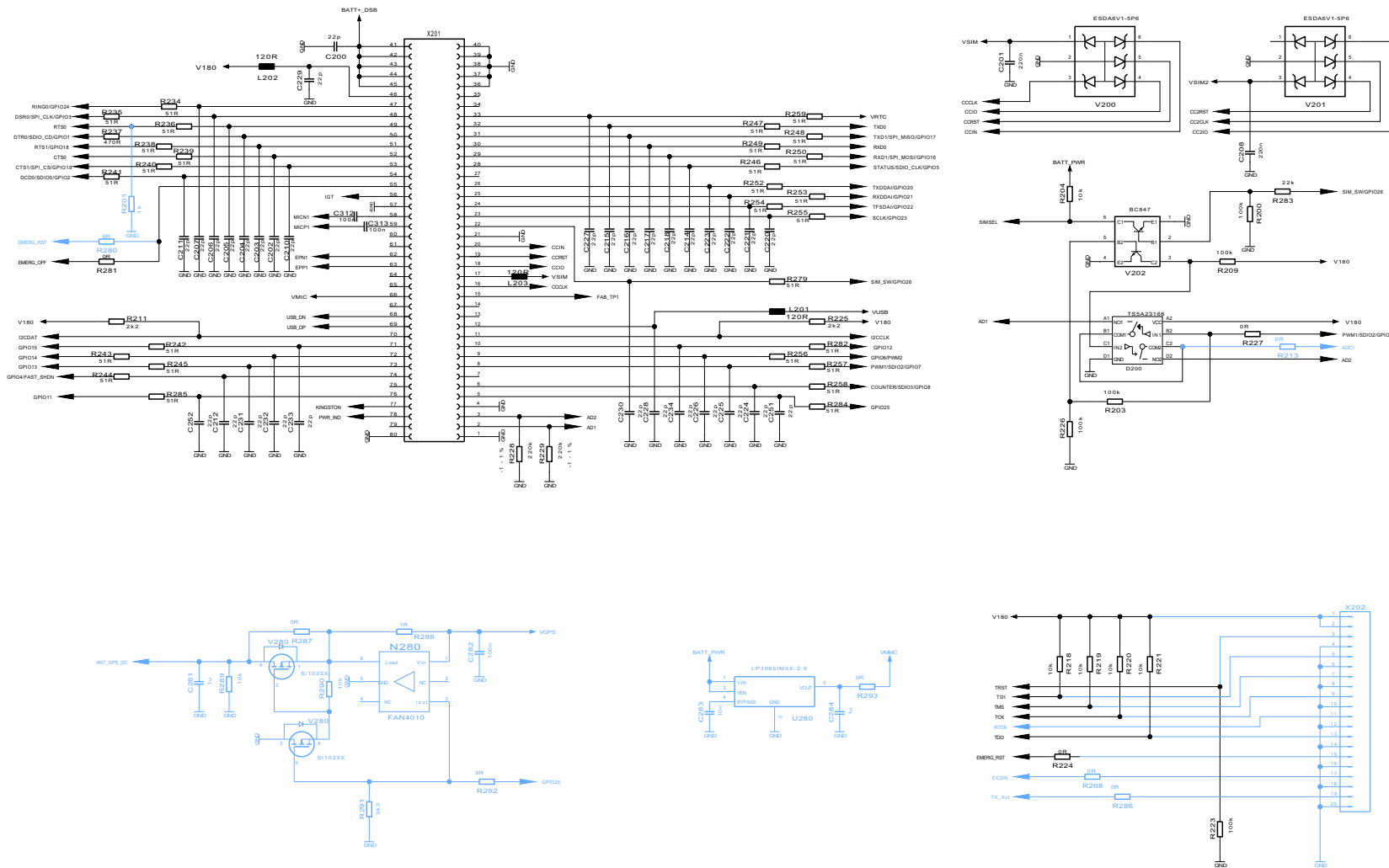


Figure 9: Schematic sheet 2



## About Gemalto

Since 1996, Gemalto has been pioneering groundbreaking M2M and IoT products that keep our customers on the leading edge of innovation.

We work closely with global mobile network operators to ensure that Cinterion<sup>®</sup> modules evolve in sync with wireless networks, providing a seamless migration path to protect your IoT technology investment.

Cinterion products integrate seamlessly with Gemalto identity modules, security solutions and licensing and monetization solutions, to streamline development timelines and provide cost efficiencies that improve the bottom line.

As an experienced software provider, we help customers manage connectivity, security and quality of service for the long lifecycle of IoT solutions.

### For more information please visit

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