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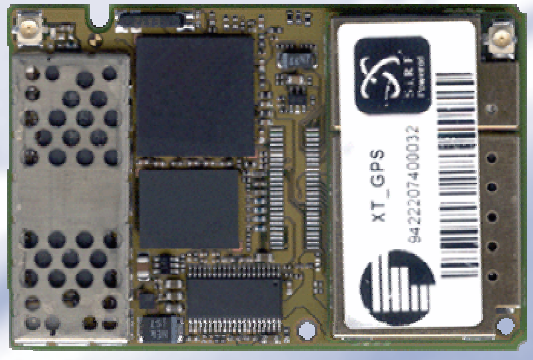

XT55

GPS Startup

Siemens Cellular Engine

Version: 01
DocID: XT55_GPS_startup_ug_V01

User's Guide

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1 Introduction

This brief guide explains the basic steps for getting started with the XT55 GSM/GPS device. It allows a quick and uncomplicated configuration and evaluation by the user via local RS232-interface (directly connected to the serial port) or via remote (e.g. installed in a vehicle) GSM (air link).
With Windows™ HyperTerminal application (utility that is pre-installed on all versions of Windows 98, 98SE, Windows ME, Windows NT, and Windows 2000) it is possible to receive GPS position data and alarm status reports, as well as to execute a range of remote configurations.
If the XT55 is configured remotely, prerequisite is the connection of a suitable GSM modem.

The configuration possibilities mainly cover the following areas:

1. **GPS**
   - History function
   - Activation of predefined time and speed as a condition for storing position data in the internal history memory, as well as the option of remotely retrieving the history.

   - GPS polling (NMEA commands, data calls)
   - NMEA command remote request the current status of alarms, start position request.
   - Start data calls directly to the GPS position surveillance of a module XT55.

2. **Request the current status of GPIOs**
   - 2 I/O

1.1 Related documents

[1] XT55 AT Command
[2] XT55 Hardware Interface Description
[3] XT55 GPS Command Specification
[4] XT55 AVL Software Instructions User's Guide
[5] GPRS Startup User's Guide
[6] Remote-SAT User's Guide
[7] DSB45 Support Box - Evaluation Kit for Siemens Cellular Engines
[8] Application Note 07: Li-Ion Batteries in GSM Applications (in preparation)
[9] Application Note 16: Upgrading XT55 Firmware (in preparation)
[10] Application Note 14: Audio and Battery Parameter Download, (in preparation)
[11] Application Note 02: Audio Interface Design, (in preparation)
[12] Multiplexer User's Guide
[13] Multiplex Driver Developer's Guide for Windows 2000 and Windows XP
[14] Multiplex Driver Installation Guide for Windows 2000 and Windows XP
[15] Application Note 24: Application Developer's Guide

Prior to using the XT55 engines or upgrading to a new firmware release, be sure to carefully read the latest product information.

To visit the Siemens Website you can use the following link:
http://www.siemens.com/wm

1.2 Terms and abbreviations

Abbreviation	Description
GPS	Global Positioning System
NMEA	National Maritime Electronics Association
GSM	Global Standard for Mobile Communications
GPI	General Propose Input
CRLF	Carriage Return/Line Feed
bps	Bit per Second

2 Getting started

Please ensure that the XT55 module connects properly to the application platform. In order to prevent mechanical damage, be careful not to force, bend or twist the module.

2.1 Terminal emulator setup

The example below is based on the Windows™ HyperTerminal application (terminal emulator program).
The instructions below describe how to use the XT55 with a PC running Windows 2000.
On the first time power-up you can use terminal software, which allows the communication with a modem via a RS-232 serial port. The following example is using the HyperTerminal in Windows 2000.

On Windows 2000, start the Hyper Terminal program. Assign the name for a new session on the displayed window (e.g. XT55).

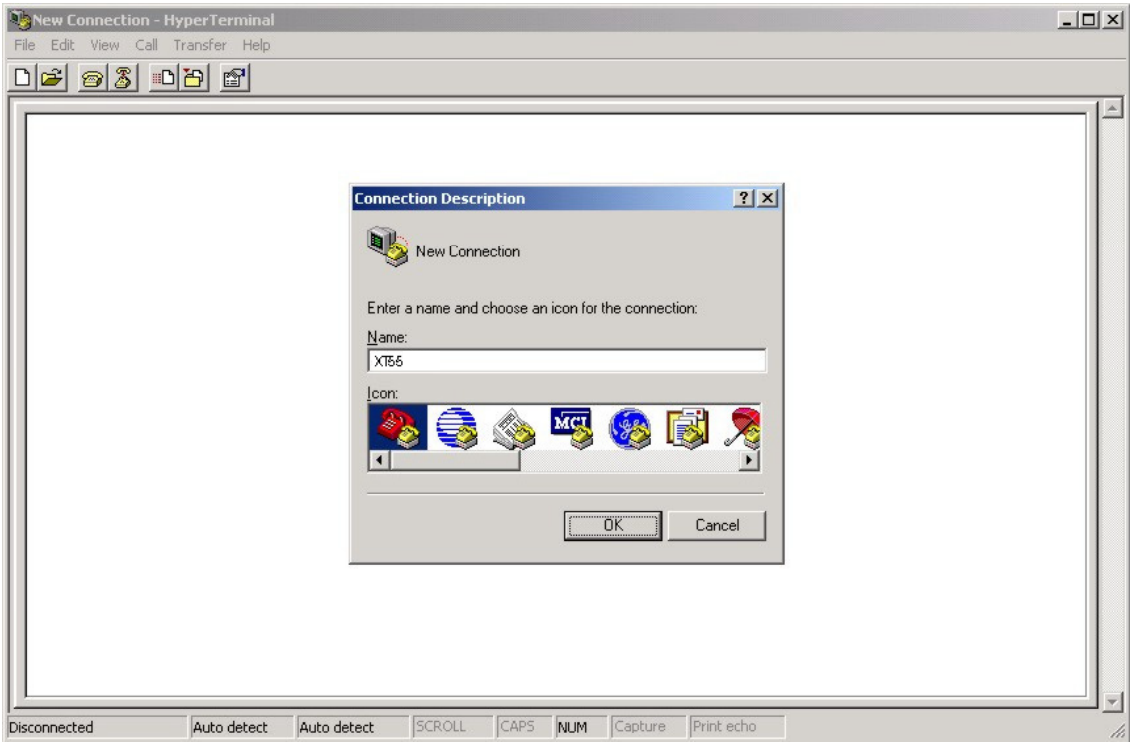

Figure 1: Assign the name for a new session

Choose the right COM Port and baud rate settings (9600bps, 8 bit, no parity bit, 1 stop bit).

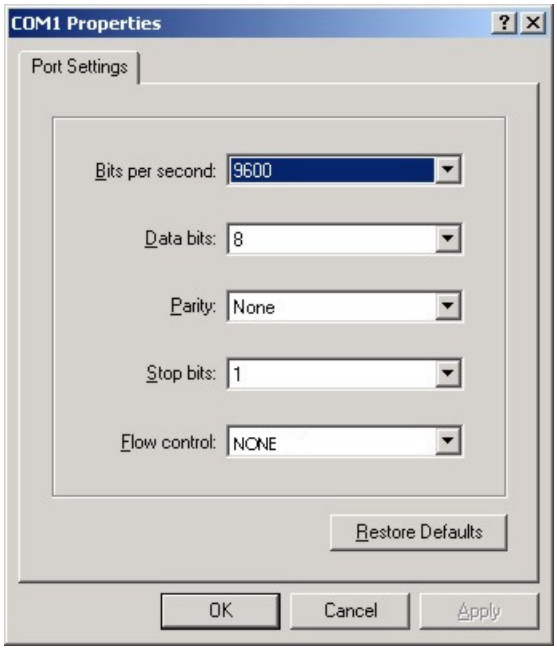

Figure 2: COM Port transmission settings

If a connection to the XT55 module has been established, the transmitted protocols will be displayed.

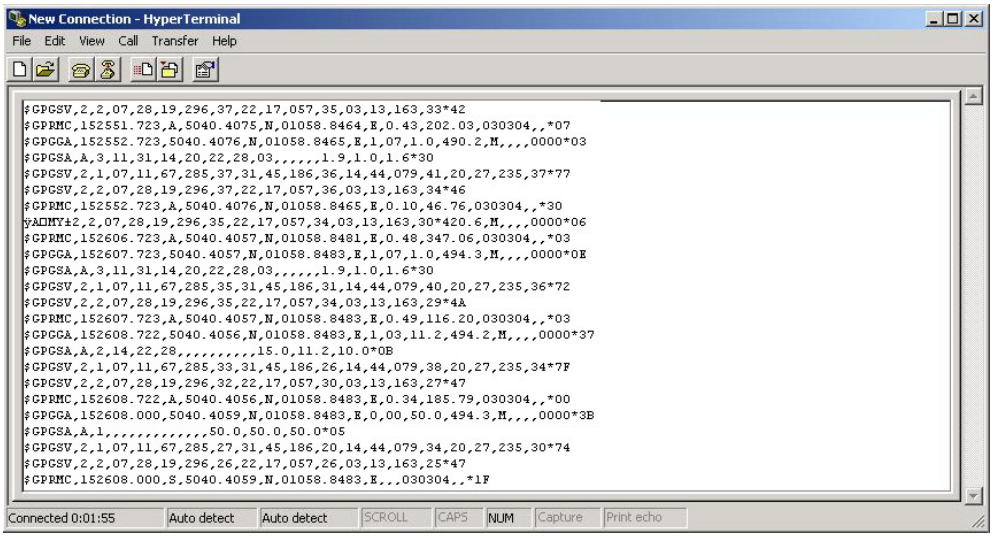

Figure 3: Displaying the transmitted NMEA protocols

2.2 Evaluating GPS data using SiRFdemo software

To evaluate GPS data use special GPS software like SiRFdemo. Please download the provided SiRFdemo software.

- Run the SiRFdemo software by double clicking the **SiRFdemo.exe** file. The SiRFdemo program will be automatically installed onto your computer.
- To start the SiRFdemo software, either double-click on the **SiRFdemo.exe** installed file or if you have created a shortcut on your desktop, double-click the **SiRFdemo.exe**.
- The SiRFdemo software will appear as follows:
  Before running the software, make sure that your PC is recognizing the XT55 module properly. In order to receive satellite signals, please place it so that the receiver can have clear view to the sky.

- On the activated **Data Source Setup** window, select the COM (e.g. COM5) for SiRFdemo program and set the baud rate to 9600 bps.

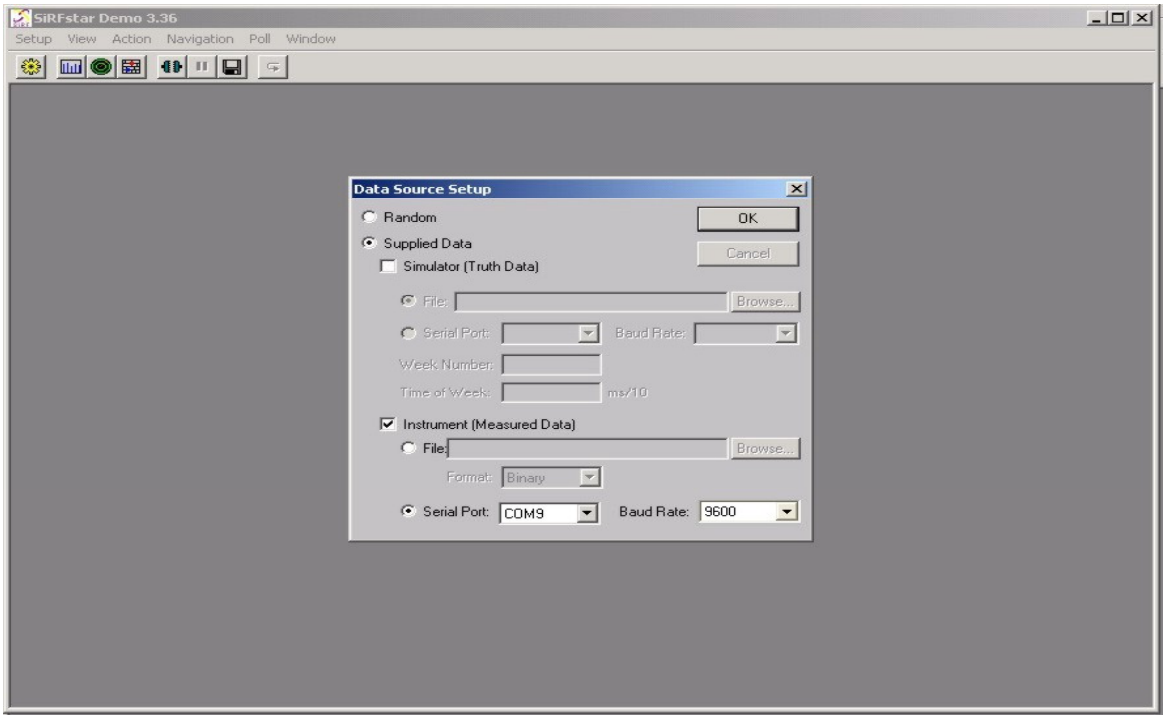

Figure 4: COM port selection

- Click the connection icon on the toolbar by the up-down button (marked button in figure below), the program will then automatically connect to Data Source and starts evaluating.

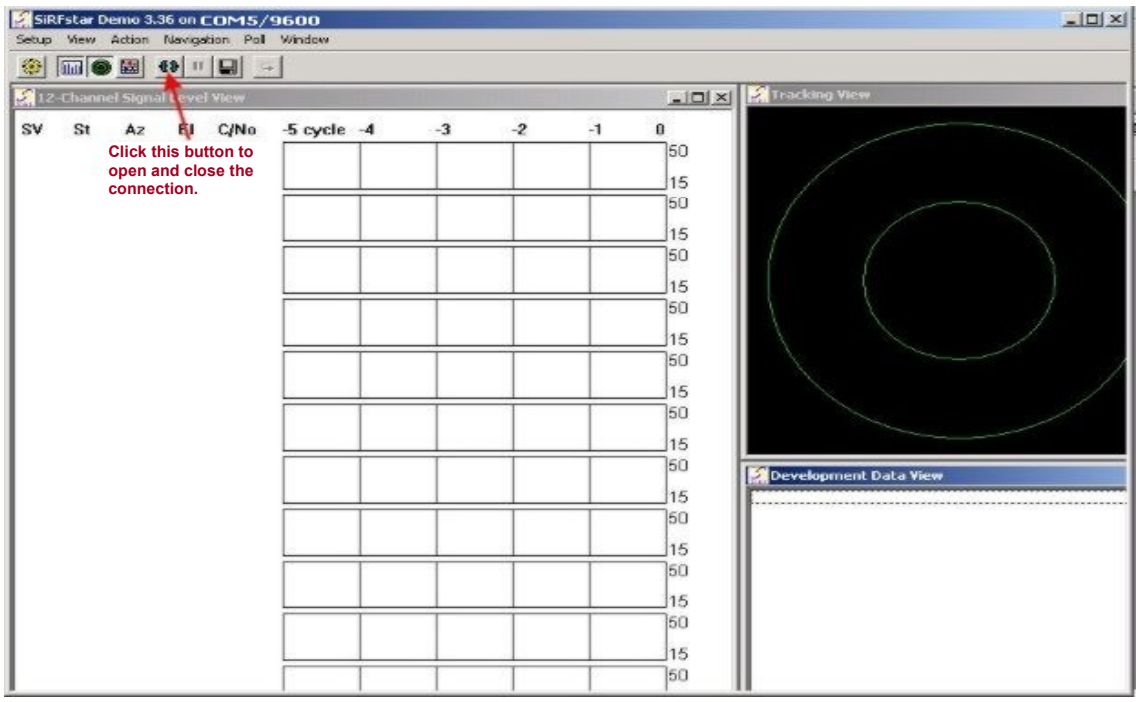

Figure 5: SiRFstar demo on selected COM port

- The output messages can be viewed in the Development Data screen. For a description of NMEA messages refer to [3]. The valid/invalid protocols can be recognized on the $GPRMC protocol as shown in figure below. The capital letter "A" means, incoming protocols are valid while the capital letter "V" means incoming protocols are invalid.

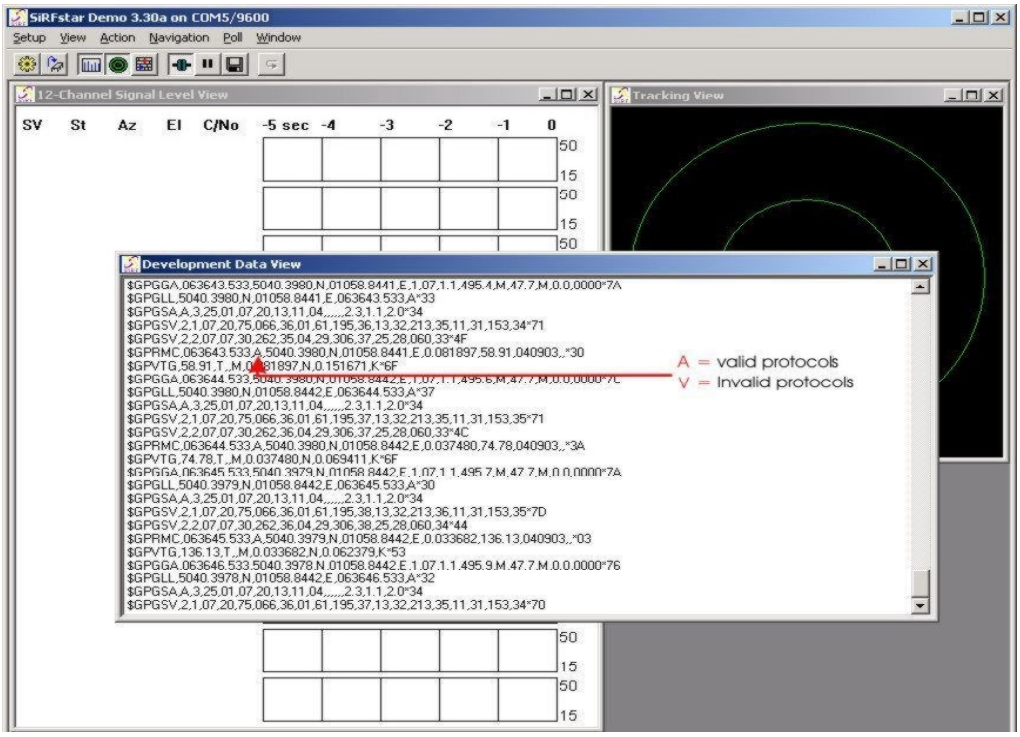

Figure 6: Development data screen

- If the XT55 module is receiving valid GPS positions, click the Map View icon on toolbar by the up-down button (see marked button in figure below), the user can see the updated data of longitude, latitude, altitude, date time etc.

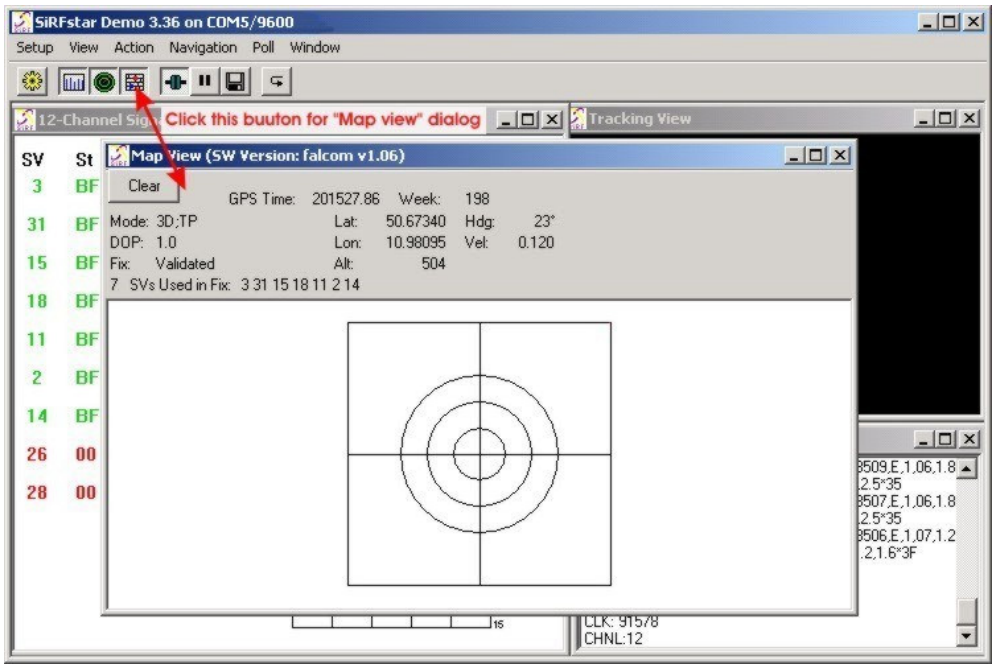

Figure 7: Updating GPS data in Map View

3 Hardware components overview

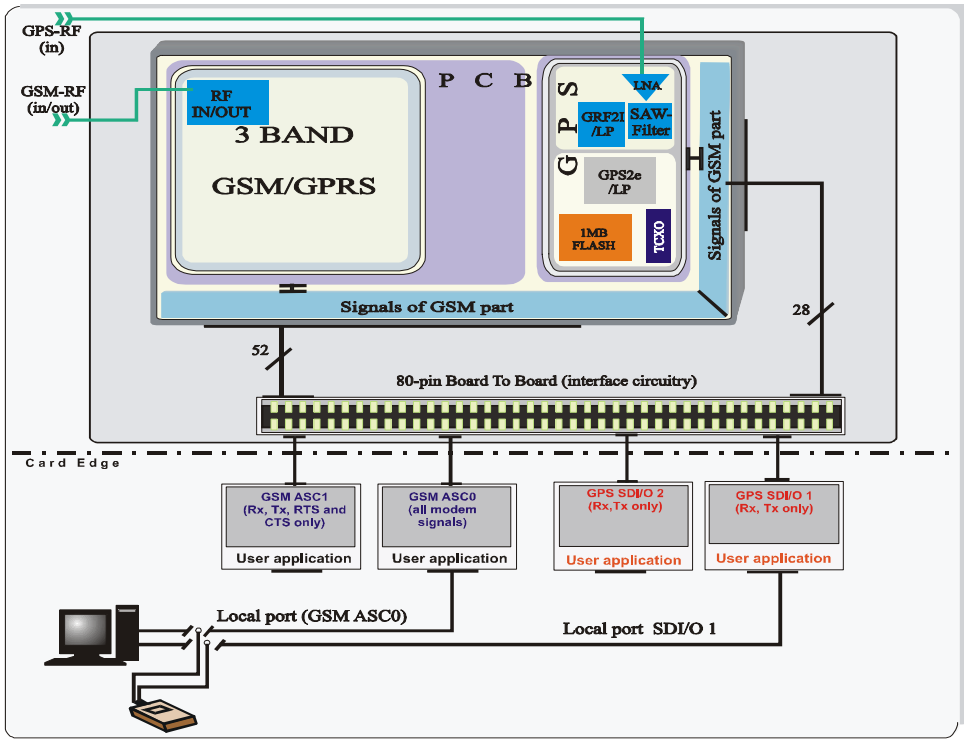

Figure 8: Block diagram of XT55 for SiRF Demo application

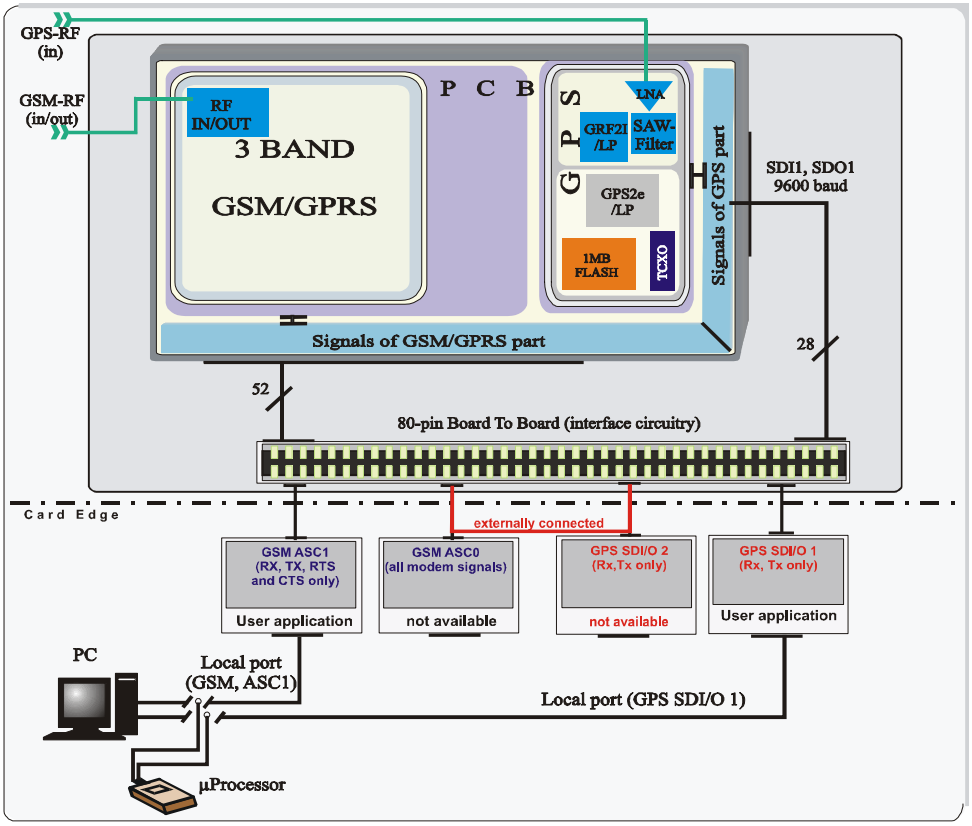

Figure 9: Block diagram of XT55 with AVL or TCP/IP application (optional)