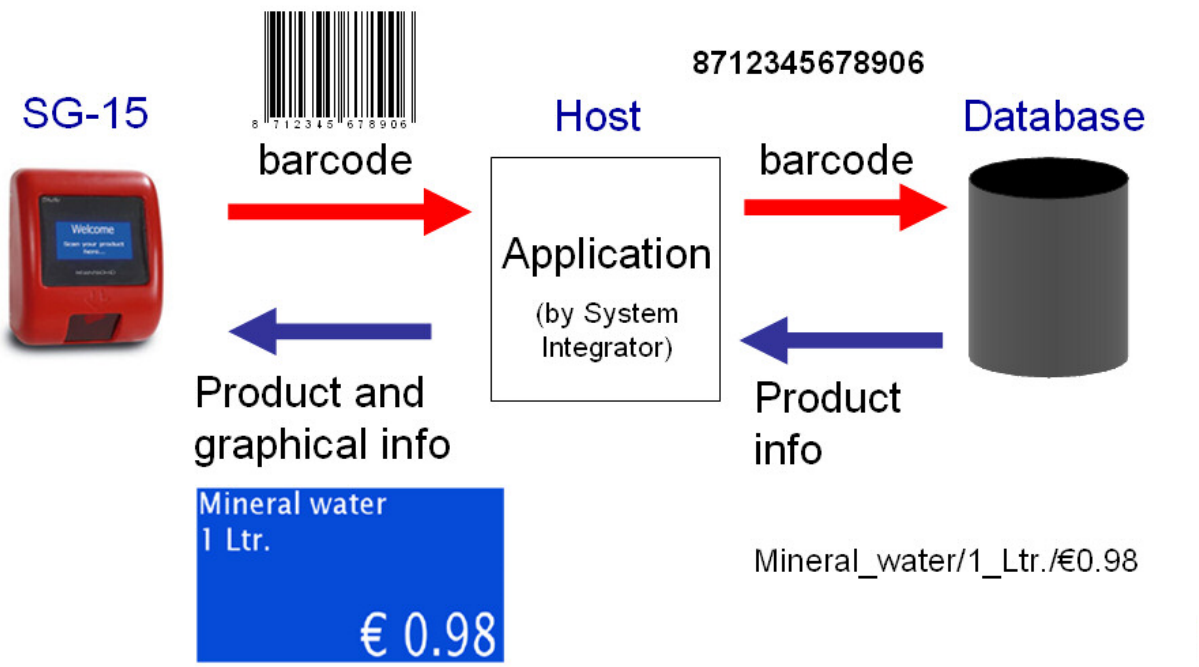
Easy Integration of the Scantech SG-15 Price Checker



SCOPE:
With this document we are providing you with initial input and directions regarding the integration of the Scantech SG-15 Shuttle Price Checker:

1. General Explanation And Approach

In Chapter 2.3 of the SG-15 User's Manual you find a general description of how the Shuttle actually operates. In Appendix H you'll find the Shuttle Project Tasks described (who does what).

> You can download the Shuttle manual from:
> http://www.scantech-id.com/Default.aspx?tabid=67
> By selecting: Customer Information Terminals / Shuttle / Manual.

Secondly there's a PowerPoint presentation on the Product Support CD ,included with every Shuttle, explaining all features and operation of the unit.

On this CD you find in directory 'Demonstration Tool' a very easy-to-use demo tool. Appendix K of the User's Manual describes how to use this Demo tool.

For the next level and phases:

- Chapter 4.1 of the User's Manual describes the function of the software package which controls the SG-15.
- On the Product Support CD you find in directory 'Source Code Examples' Basic and Enhanced examples for the source code of the application package which connects the SG-15 Shuttle with the article database.

- Regarding the Enhanced Source Code Examples; see the leaflet on CD (directory: \Source Code Examples\Enhanced, file: Technical Update SG Software Tools) about this very complete and free of charge driver plus example source code information and article database (simple text file!)
- When you install these tools, the source code of this application will be installed on your hard drive. See directory C:\Program Files\Scantech ID\SG_net\demo\src.
- Tip of the day: Some of our integrators export the article database in the same format as the demo database of the SG tools (see file: SG_net\demo\sg_db.txt). By doing this, the coupling between the SG-15 Price Checker and your article database is completely taken care of! Easy as that!

2. Technical Explanation And Things To Be Done

The following steps should be taken care of:

2.1. After the SG-15 is physically connected to the Ethernet, it has to make a connection with a server program (which is responsible for getting the price information from the database and displaying it nicely on the SG-15's screen).
The SG-15 has 3 methods of making a connection to that server program:
• TCP Client: which means the SG-15 tries to connect to the server program.
• TCP Server: the server program tries to connect to the SG-15.
• UDP: there's no connection at all, the SG-15 just sends a barcode the server program and hopes it receives it. Likewise, the server sends its data for an SG-15 without knowing if it arrives or not.
Using the configuration tool (which is currently only available for MS-Windows, but soon also for Linux) you can set the specific network settings, like: which server to connect to, Client/Server/UDP settings, etc. See Chapter 5.1 of the User's Manual.

2.2. Once a connection has been made, there can be communication between the SG-15 and the server program. This means that the server can send any ASCII text to the SG-15, which displays it.
This also includes the ESC-commands to (e.g.) clear the screen, etc.
See Appendix B of the SG-15 User's Manual for all features, examples and full command set for controlling the SG-15 terminal.
The SG-15 can scan barcodes and send these to the host (barcodes are sent as plain ASCII).

2.3 Usually, the server program is waiting for barcodes from all SG-15's in the store. Once a barcode comes in, it has to search the database for a proper description and price info (or whatever info is needed) and has to format it in such a way that it looks nicely on the SG-15's screen (the ESC command codes are used for this).
The complete formatted text will then be sent back to the SG-15 which displays it.

Well, that's about it.

To summarize what has to be done:
• A connection has to be made between an SG-15 and a server program
• The SG-15 sends barcodes to that server program (The SG-15 has to be properly configured using the SG-15 Configuration Tool first)
• The server receives barcodes from any SG-15 and has to access the database to retrieve proper product information and pricing. This information has to be formatted nicely and sent back to the SG-15 which sent that barcode.

The SG-15 Product Support CD has lots of example programs on it, written in C, C++ or Visual Basic.
Any programmer who doesn't know how to set up socket communication, can use these examples to get themselves acquainted with the subject.
We've also released a so-called 'SG Ethernet Driver' which entirely takes care of the connection and communication between the server program and all SG-15's in the store. The only thing which has to be written by the software integrators themselves, is a connection with the database.
Overall: This package saves the software integrator a lot of time.
It's available for Windows and Linux and is included on the SG-15 Product CD as of V1.3.

2.4 On the SG-15 product CD, there's also an example program called "SG-15 Demo.exe" (in the directory "\Demonstration Tool").
This program requires the SG-15 to run in 'TCP Server mode' (using the Configuration tool).
You can hook up the SG-15 directly to your laptop by using an Ethernet cross cable.
After you use the program to connect to your SG-15, you can literally see what's been sent between the SG-15 and your laptop (like barcodes, etc).
SG-15 Demo.exe doesn't use a database, but has 5 standard texts built in, which it sends randomly after receiving any barcode. It's just meant as a tool, for quick demonstrations.