

# Information Terminal

RP-04 RP-05 Linux



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Please send us a copy of this page if you have any constructive criticism.  
We would like to thank you in advance for your comments.

With kind regards,

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# **Information Terminal**

**RP-04 RP-05 Linux**

**Configuration Manual**

**Edition February 2021**

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Diebold Nixdorf GmbH reserves the right to revise this manual, and to make changes in the contents without obligation to notify any person or entity of the revision or change. A serial number appears on the product. Make sure that this official registration number has not been removed. It should be used whenever servicing by Diebold Nixdorf GmbH or an authorized Diebold Nixdorf dealer is necessary.

**Important**

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to EN55022, and with the limits for a class A digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the user's manual, may cause harmful interference to radio communications. Operation of the equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense. Any unauthorised changes or modifications to this equipment could void the user's authority to operate this equipment.

This device is in conformity with the CE standards. Please note that a Scantech CE-marked power supply unit should be used to conform to these standards.

**Radio and television interference**

Operation of this equipment in a residential area can cause interference with radio or television reception. This can be determined by turning the equipment off and on. The user is encouraged to try to correct the interference by one or more of the following measures:

- Re-orientate the receiving antenna
- Relocate the devices with respect to the receiver
- Move the device away from the receiver
- Plug the device into a different outlet in order to have the device and receiver on different branch circuits

If necessary, the user should consult the manufacturer, an authorized Diebold Nixdorf dealer or experienced radio/television technician for additional suggestions. The booklet "How to Identify and Resolve Radio-TV Interference Problems", prepared by the Federal Communications Commission, can be of help. It can be obtained from the U.S. Government Printing Office, Washington, DC 20402, Stock No. 004000003454.

Due to Diebold Nixdorf's continuing product improvement programs, product features, the information and specifications in this manual are subject to change without prior notice.

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## 1 GENERAL PRODUCT DESCRIPTION

The RP-05 and RP-04 are high-quality and multifunctional information terminals, combining all functions of a compact kiosk system and classic price-checker. The information terminal comes with touch screen and multi-media features, promotions helping customers to find/receive information and product pricing easily. The convenience provided by RP-05 can enhance customer satisfaction, improve sales volume and reduce operational costs.

The RP-04/05 MK II features our latest technology in terminal system design. Interfacing is done either through wired Ethernet or Wireless RF. The full color display can be used to play slideshows or product promotion videos.

Because of its compact design and size, the RP-04/05 can be mounted anywhere in a store. This flexibility of installation is enhanced by the optional WiFi connection or Power-over-Ethernet.

### **Our Long and Rich History**

The terminals RP-04/05 MK II are the latest product developed by the company which has more than 25 years of experience in the field of Customer Information Terminals.

### **Quality and Durability**

The RP-04/05 comes with the same top quality as all other Diebold Nixdorf products. With RP-04/05 you get the same quality and performance of more expensive products but at a very competitive price.

### **Flexibility**

The RP-04/05 can be easy and safe installed using the attached VESA 75mm bracket. The touch screen display (RP-05) and high quality stereo audio make it easy to read prices and product and promotional information.

### **Integration**

The RP-04/05 comes with a Web-based Configuration Management Tool for easy customization. Software sample source code to get the RP-04/05 easily connected to the store's database is available upon request.

The protocol specification for easy integration is available on demand.

# 1.1 PRODUCT FEATURES

- Self-service SCAN KIOSK with touch screen (RP-05) and media display function
- Multimedia support with High Quality speakers
- Color-screen Price Verifier
- Compact dimension to easy deploy anywhere in the store
- Map out digital promotion image/video media
- 2D Imager or Omni Directional Laser Scanner
- Standard Ethernet LAN 10/100 Mb/s
- WiFi IEEE 802.11 ac a/b/g/n 2.4 and 5 GHz                      Optional
- Power over Ethernet support    Optional
- Compliant with VESA 75mm
- Built-in Web Server for easy configuration access, remote management, diagnose, monitor and troubleshoot the device.
- SKWEBSERVER Example Server Software, including Source Code and CSV database.
- Entry/Exit-Gate control function support standard onboard.
- Expandable — can easily build on by adding third-party USB peripherals, including printers, magnetic stripe readers, keyboards and more.

## 1.2 FUNCTIONING OF THE RP-04 RP-05

### Introduction

The RP-04/05 is a Customer Information Terminal, which receives input (barcode data), from a user and answers via the display. The display contents is provided by a computer application, which runs on a (server) system elsewhere.

#### 1.2.1 Input

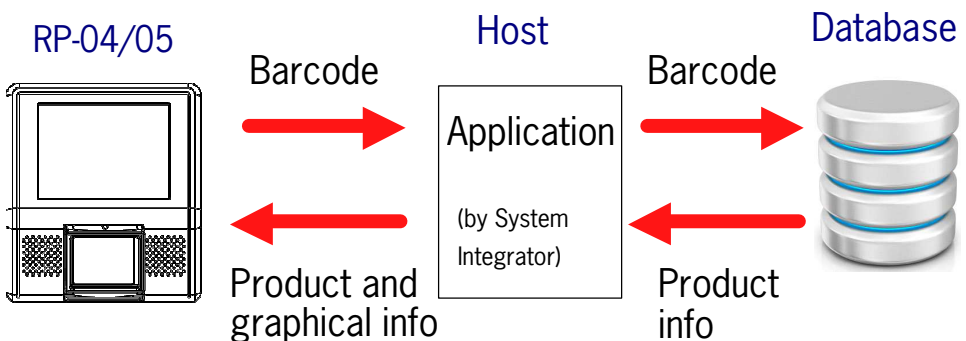
The main input -bar code information- is generated by the integrated 2D imager. An RF-ID reader is optional available to provide IDentification information.

#### 1.2.2 Output

Based on the bar code input and the application software on the host-system the RP-04/05 communicates with the user via text on the screen and optional graphics and audio feedback via the speakers.

#### 1.2.3 System Integration: Software & Control

The functions during daily use of the RP-04/05 are determined by the application program, which is controlling the RP-04/05. So the task of the storage of databases, providing the information and sending it to the display of the RP-04/05 will be performed by a central host system. Providing this application, running on the host system, is the responsibility of the System Integrator.



## 2. Introduction on RP-04/05 System Integration

### SCOPE

The Diebold Nixdorf ScanKiosks RP-04 and RP-05 are very versatile Customer Information Terminals. Below you find Quick Start Guidance on the applications and tools we offer to integrate the RP-04/05 (Linux version) as a

**Price Checker Application**, where it is linked with a local or remote database. The terminal will show product data, such as article name, article price and any additional information.

As a standard the RP-04/05 supports:

- **Three integration methods (applications) and**
- **Seven data communication protocols.**

1. The future proof application available on the RP-04/05 called:

#### **WEB PRICE CHECKER.**

This name speaks for itself.

The marketing-communication slogan is: "**Price Checking From The Cloud**".

This is how it works:

The RP makes an HTTP request with scanned data to a web server responding with an HTML page including Article-name, Price and Picture, which will be displayed on the RP-04/05.

- For more details, see Chapter 4.
- Host/Server Example Software **SKWEBSERVER** is available upon request.
- There is a demo website online to demonstrate and test the RP-04/05 with this application. See Chapter 4.2.
- Feature: Scan QR barcodes (with valid URL) and the URL content will be displayed on the RP-04/05.

2. The generic **SKPRICECHECKER** application on the RP-04/05 supports five different character based communication protocols to communicate with the store Server. See Chapter 4.4 for details.

One of the 5 protocols is the generic communication protocol SKEPS, based on data-exchange between the RP terminals and server through XML messages, primarily text based. See separate SKEPS Interface Description.

3. The **SGPRICECHECKER** application for SG-15 and SG-20 Emulation Mode

4. Further to the Price Checker Function, no matter which of the methods described above is chosen, users can run the **PROMOTOOL**, to actively communicate weekly promotions and discounts and general store messages, running as a Slideshow on the RP-04/05 screen. Ref: Chapter 4.3.

For maximum User Convenience and readability on the RP-04/05 screen:  
The Best In Class performance is achieved by integrating the RP-04/05 using the Web Price Checker application.



## **Chapter 3 Configuring the RP-04/05**

---

### 3.1 Making First Connection and Login

The information given below is based on RP-04/05 firmware  $\geq$  V0.9.7.

The RP-04/05 has an internal web server for configuration purposes. Just start your web browser (Chrome, Firefox or Internet Explorer) and enter the IP-address of the RP-04/05. Note: Use Internet Explorer version 11 or higher.

The RP-04/05 comes with installed Factory Default Settings and at startup it will try to connect to a LAN network with enabled DHCP service. When there is no DHCP service active, the RP-04/05 will use 192.168.1.200 as default IP-address for the LAN interface.

The unit's IP address is visible on the launcher screen after power-up, both Ethernet and WiFi.

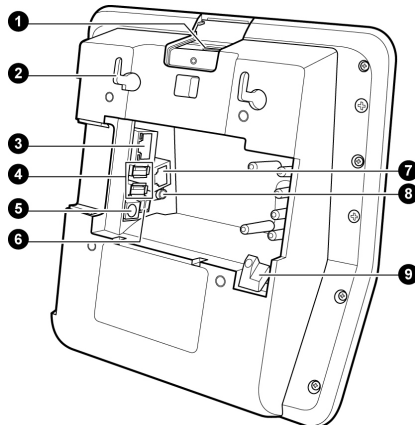
Make sure your computer is in the same IP subnet as the RP-04/05 you're going to configure.

E.g.: The RP-04/05 has IP address 192.168.1.200 and your computer has address 192.168.1.250.

The physical connection with the RP-04/05 is made using an Ethernet cross-cable or alternatively through your local network:

3. LAN port connecting the unit to the network

5. DC jack connects the 12VDC power adapter.

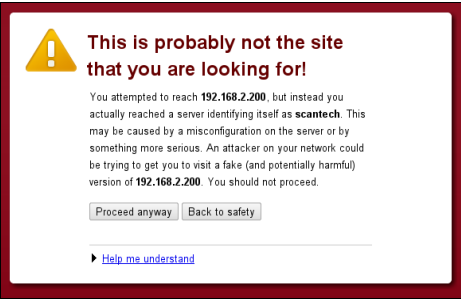


See RP-04/05 **Installation Manual** for more details



Login Page

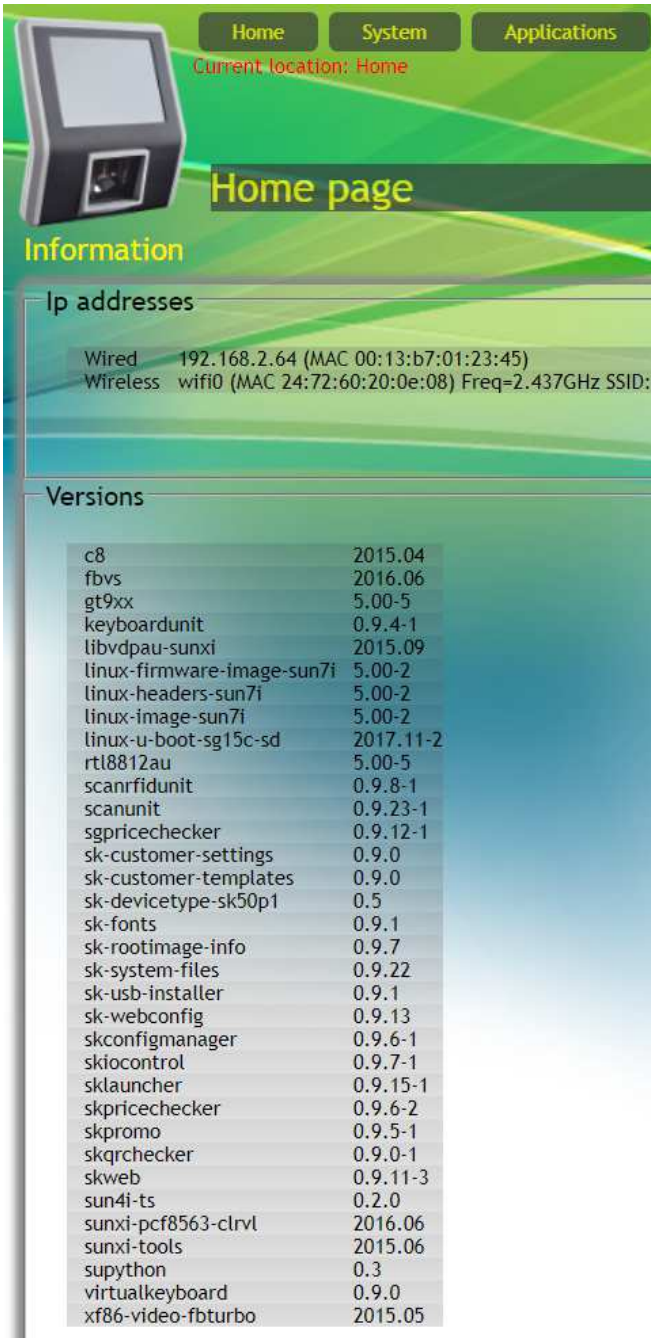
To manage RP-04/05 settings, it runs a web server in https mode for exchanging queries and responses with a modern browser (e.g. Chrome, Firefox or IE). Enter the RP-04/05 IP address in the address bar of your browser to open the login page. Prior to accessing the login page, you will receive an SSL warning from your browser, which you can ignore by clicking « Proceed anyway »



The login page appears and you can login with:



User Name	<b>skadmin</b>
Password	<b>skadmin</b>



The screenshot shows a user interface with a green and blue background. At the top, there are three buttons: "Home", "System", and "Applications". Below the "Home" button, it says "Current location: Home". On the left, there is an icon of a device. The main heading is "Home page". Below this, there is a section titled "Information" which contains "Ip addresses". Under "Ip addresses", it lists "Wired" with IP 192.168.2.64 and MAC 00:13:b7:01:23:45, and "Wireless" with wifi0, MAC 24:72:60:20:0e:08, and Freq=2.437GHz SSID:. Below the "Information" section is a section titled "Versions" which contains a list of packages and their versions.

Home System Applications

Current location: Home

## Home page

### Information

#### Ip addresses

Wired 192.168.2.64 (MAC 00:13:b7:01:23:45)  
Wireless wifi0 (MAC 24:72:60:20:0e:08) Freq=2.437GHz SSID:

### Versions

c8	2015.04
fbvs	2016.06
gt9xx	5.00-5
keyboardunit	0.9.4-1
libvdpau-sunxi	2015.09
linux-firmware-image-sun7i	5.00-2
linux-headers-sun7i	5.00-2
linux-image-sun7i	5.00-2
linux-u-boot-sg15c-sd	2017.11-2
rtl8812au	5.00-5
scanrfidunit	0.9.8-1
scanunit	0.9.23-1
sgpricechecker	0.9.12-1
sk-customer-settings	0.9.0
sk-customer-templates	0.9.0
sk-devicetype-sk50p1	0.5
sk-fonts	0.9.1
sk-rootimage-info	0.9.7
sk-system-files	0.9.22
sk-usb-installer	0.9.1
sk-webconfig	0.9.13
skconfigmanager	0.9.6-1
skiocontrol	0.9.7-1
sklauncher	0.9.15-1
skpricechecker	0.9.6-2
skpromo	0.9.5-1
skqrchecker	0.9.0-1
skweb	0.9.11-3
sun4i-ts	0.2.0
sunxi-pcf8563-clrvl	2016.06
sunxi-tools	2015.06
supython	0.3
virtualkeyboard	0.9.0
xf86-video-fbturbo	2015.05

On the Home Page you find the terminal information: IP and MAC address(es) and an overview of the package versions.

## 3.2 Configure RP-04/05 Wired network settings

On the Configuration Web Page “Wired Network” you set the IP address of the RP-04/05 terminal:



Home System Applications Peripherals Logout  
Current location: System/Wired network

### Wired network 1.2.2

Network Configuration (wired)  
Status: 192.168.2.64 (MAC 00:13:b7:01:23:45)

DHCP ☒ On

Static IP address	192.168.2.200
Netmask	255.255.255.0
Default gateway	192.168.2.254

Apply Save only Test Cancel

With Factory default settings, the RP-04/05 starts with DHCP=On and settings as displayed above.

At startup, the assignment of an RP-04/05 IP-address takes place according the following procedure:

1. When DHCP is enabled and a DHCP-service is active on the network, the RP-04/05 will use the IP-address assigned by the DHCP-service.
2. When DHCP is enabled but the DHCP-service is not active on the network, by default the RP-04/05 will use Static IP Address: 192.168.1.200.
3. When DHCP is disabled, the remaining fields in the section become editable and the RP-04/05 will « [Apply](#) » the entered values as such.

Important: When changing the LAN settings with « [Apply](#) », your RP-04/05 will immediately disconnect from your browser. For re-connecting your browser you must match the network settings of your PC compatible with those of your RP-04/05. After re-connecting and re-opening web-page [System->Wired Network](#), the Status line will display the new IP-address. The Save Only button prevents the connection loss and the newly inputted IP address will become valid after repowering the unit.

The RP-04/05 IP address (LAN and WLAN) is visible:

- on the Desktop, after power-up, shortly before starting the boot-app and
- after scanning the Terminal Status barcode (Appendix F).

Wired Network settings, continued information:

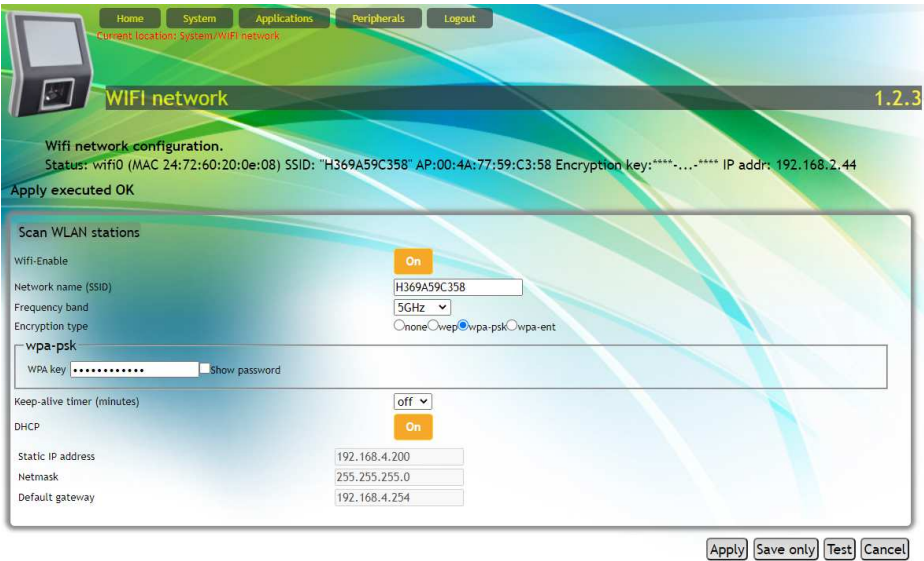
- Static IP Address: fixed IP-address (only editable when DHCP=Off).
- Netmask: determines the class of network.
- Default Gateway: default IP-address used by the RP-04/05 whenever it addresses IP's that do not match any other routes in the RP-04/05's routing table.

Notes:

1. The Default Gateway address always shares the network value for the Static IP Address.
2. In combination with WLAN it is sometimes necessary to define no Default Gateway for LAN which is done by leaving this field empty.
3. The LAN (and WLAN) IP-addresses will be displayed after scanning Control Code 01 from Appendix F

### 3.3 Configure RP-04/05 WiFi network settings

On this Configuration Web Page you input the WiFi Network settings:



#### Introduction

Changing WLAN settings is best done by connecting the RP-04/05 with an Ethernet cross-cable to your PC/Laptop. With DHCP=OFF, the RP-04/05 will activate 192.168.2.200 as default IP-address for LAN.

Make sure your PC/Laptop has a compatible network setting and login.  
Note that the RP-04/05 runs the LAN and WLAN interfaces simultaneously.  
In real life applications, only one of the two interfaces will be used to communicate with the server application.

#### Notes:

1. At start-up and Wifi-Enable=On, the assignment of the WLAN IP-address is done as follows:
  1. When DHCP is enabled and a DHCP-service is available on the network, the RP-04/05 will use the IP-address assigned by the DHCP-service
  2. When DHCP is enabled but no DHCP-service is available on the network, the RP-04/05 will use 192.168.4.201 as default IP-address.
  3. When DHCP is disabled the RP-04/05 will use the static IP-address value (192.168.4.200 factory default).

2. RP-04/05 Wi-Fi devices provided by Diebold Nixdorf support the hidden SSID feature (controlled by the Access Point).
3. If a Default Gateway is required for the Wi-Fi network then make sure that the Default Gateway for LAN is omitted (the reserved field for this must be empty).
4. At start-up and Wifi-Enable=On, the Wifi-driver will immediately attempt to set-up a connection with the given SSID. If the Access Point is not available, the RP-04/05 will continue searching for the SSID until it finds it.
5. The password for the SSID can be made visible with the tick-box Show Password.
6. When using the RP-04/05 with wireless network connection, it is highly recommended to set these Wired network parameters to:
  - A. Ethernet to Fixed IP and
  - B. make the Default Gateway field blank.
7. The button « [Save Only](#) » allows you to change the Wifi settings without actually activating the Wifi connection. This is useful when configuring Wifi without an Access Point i.e. it avoids unnecessary waiting for connection timers to time-out.
8. RP-04/05 with WLAN supports IEEE 802.11 a/b/g/n/ac, dual-band 2.4GHz/5GHz.

### Legend Status

After entering your Wifi settings and « [Apply](#) », the *Status* line will show the new RP-04/05-WLAN network interface settings.

A successful WLAN connection will be shown in the webpage:



Entering an « [Apply](#) » to setup a WLAN connection with correct settings and good signal quality takes less than 10 seconds and the message Apply executed OK will confirm a successful operation.

Note: Always check first if a WLAN device present in the RP-04/05.

Ref: Home Page under IP addresses it shows: "Wireless wifi0 (MAC...." and Wifi-Enable=On.

**Chapter 4      Applications**

---

HomeSystemApplicationsPeripheralsLogout

Current location: Applications/Web price checker

Web price checker1.3.3

Start pagefile:///apps/config/skweb\_welcome.{@SKTYPE}.html

Welcome pagefile:///apps/config/skweb\_welcome.{@SKTYPE}.html

Welcome timer10

Query URLhttp://demo.scantech-id.com/demo/pricecheck/{@SKTYPE}/{@BARCODE}

Error Pagefile:///apps/config/skweb\_error.{@SKTYPE}.html

Allow URL barcodesOff

Accepts

1d barcodesOn

2d barcodesOn

RFID tagsOn

OthersOn

Verify Server CertificateOn

Enable JavascriptOn

Enable ObjectCache (css,scripts,etc)On

URL-encode BarcodeOff

Use POST requestOff

Ignore Special Statuscodes(304/204)Off

ApplyCancel

Illustration: Web Configuration Page of the Web Price Checker Application 1.3.3



## Chapter 4.1 The Web Price Checker application

### Introduction

To make the RP-04/05 long term future proof the RP-04/05 features the valuable Web Price Checker application, which is standard on board as of firmware V097.

These are the **Features** and **Benefits**:

- Easy integration of the RP-04/05 in the Retailers IT structure, using HTML web standards.
- Central Management of RP-04/05 screen content
- Natural and easy use of colours on the RP-04/05 screen
- Built-in Price Check demo on board. Straight from the box.  
No configuration required.

The web based price-checker uses a web-kit library to setup a browser-like connection to an http server. When a bar code is scanned, the RP-04/05 will send the scanned data as an HTTP request to a web server. The web server is responsible for generating the HTML page with Article/Price/Picture content, which is sent to the RP-04/05.

The Web Price Checker will interpret and show the content on the display.

### 1. START PAGE

Default, the URL of the **Start** Page and **Welcome** Page are defined as HTML files residing on the RP-04/05. The **Start** page is only displayed at start-up of the Web-Price-Checker application. Having these files local on the RP-04/05 guarantees that the RP-04/05 starts with a non-empty page (even if the web-server is temporary out of service).

### 2. WELCOME PAGE

The welcome page shown in between barcode scans when the RP-04/05 is in idle state. The URL may refer to a local file or to an external (web) server.

### 3. WELCOME TIMER

After a scan and a successful article look-up, the server replies with an article description, price etc. This information is displayed on the screen for the number of seconds specified in the **Welcome Timer** field. When this timer times out, the RP-04/05 enters an idle state and normally it will re-display the Welcome Message

#### 4. Query URL

For every barcode scan, the RP sends a query URL with the requested barcode information to the web server. The Web-Price-Checker uses tag-variables in the URL for this, like for example:

<http://demo.Scantech.com/demo/pricecheck/{@SKTYPE}/{@BARCODE}>

When scanning a barcode with content **012345678905** on an RP-04/05, the URL request with variables, [{@SKTYPE}](#) and [{@BARCODE}](#) will be reformatted and send to the web server as:

<http://demo.scantech-id.com/demo/pricecheck/SK50P1/012345678905/>  
or

<http://demo.scantech-id.com/demo/pricecheck/SK40P1/012345678905/>

Just paste this URL in your regular web browser.

Note that the sequence of the variables [{@BARCODE}](#) and [{@SKTYPE}](#) in the specified URL, must match with the search path on the web server.

#### 5. Authentication in URL

Basic authentication by including predefined *username* and *password* in the URL is now also supported for HTTPS.

Adding credentials to the query-URL example as shown above for an HTTP request, requires a format like this:

(192.137.81.60 is the server IP address)

[http://username:password@192.137.81.60/auth/tbl\\_products/scan/{@BARCODE}/{@SKTYPE}](http://username:password@192.137.81.60/auth/tbl_products/scan/{@BARCODE}/{@SKTYPE})

and changes for an HTTPS into this:

[https://username:password@192.137.81.60/auth/tbl\\_products/scan/{@BARCODE}/{@SKTYPE}](https://username:password@192.137.81.60/auth/tbl_products/scan/{@BARCODE}/{@SKTYPE})

#### 4. Allow URL barcodes

This feature is useful for scanning 2D-barcodes on products or leaflets with 2D-barcodes that represent a URL referring directly to a site on the internet or intranet.

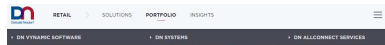
When this feature is ON and then scanning the QR-code below, the RP-04/05 will show the URL content:

Example:

<https://www.dieboldnixdorf.com/en-us/retail/portfolio/systems/peripherals/info-terminal>



Scan QR code



### RP-05 Multifunction Information Terminal

The RP-05 multifunction information terminal combines the attributes of a compact kiosk system with those of a classic price checker. Featuring a variety of multimedia functions and a 14.4 cm touchscreen display, it can provide a range of information to customers quickly and easily, for example product prices. Thanks to its two integrated high-grade loudspeakers, the RP-05 can output exceptionally sharp sound.

The multi-media functions, such as audio-visual output including video playback, allow it to be used as a versatile information terminal, providing customers not only with the classic price query function, but also giving them easy access to additional product information on an article.

Features & Benefits

Specifications



Notes:

- This requires the following settings:
  - Allow URL barcodes = ON
  - 2D barcodes = ON (Set both: On Barcode reader and Web Price Checker configuration page)
- DNS must be activated on RP (i.e. DHCP service is responsible for providing a name server).

## 5. URL tag-variables recognized by the URL parser

Tags according {@...}	Description:	Required:
BARCODE	Barcode as read by scan-engine (without identifiers)	Mandatory
SKTYPE	Type of ScanKiosk: RP-05P1 or RP-04P1	Optional
WIDTH	Pixel width of the skweb-screen	Optional
HEIGHT	Pixel height of the skweb-screen	Optional
MAC	MAC address of LAN interface. Example: 0013B71002D5.	Optional
ID	Label Identifier for barcode symbologies and RFID labels	Optional

Notes:

- The web server on the host-system is responsible for generating a web page with 640X480 (RP-05) or 480X272 (RP-04) resolution. Side scroll-bars will appear on the display when the page is too large for the actual display.
- The URL's starting with *file:///apps/config/*, refer to local HTML file which you can modify by using the download and upload interfaces on web page *Templates*.

- 3. To leave the Web-Price-Checker application, you need to scan Control barcode 002 shown in Appendix F
- 4. New configuration settings become effective immediately after Apply.
- 5. On request, Diebold Nixdorf can provide **SKWEBSERVER** “The Example Server Software”, including Source Code and CSV database

**6. IO-Control with embedded HTML commands**

The Web Price Checker parses every HTML page it receives from the web server, in search of special embedded commands that are related to input or output actions. The general syntax for these special IO commands is:

```
<!--SK: controlname : controlcommand -->
```

Note that controlname and controlcommand are separated by a colon

Embedded command examples:

Embedded HTML command	Action
<!--SK:BackLight:toggle-->	Reverses the actual state of the display back light.
<!--SK:EXITGATE:1000-->	Activate the green IO-port for Exit Control for 1000 msec
<!--SK:POWEROUT:5000 -->	Activate the Powered (orange* <sup>1</sup> ) IO -port for Exit Control for 5 secs
<!--SK:POWEROUT:10000 -->	Activate the Powered (orange* <sup>1</sup> ) IO -port for Exit Control for 10 secs

\*1: Requires dedicated hardware

**Side Note:**

As of the RP-04/05 MK-II version, the terminal hardware includes the Exit Gate Connector as a standard.





## Chapter 4.2      On-Line Demo Website for the Web Price Checker Application

The most modern integration method of the RP-04/05 Price Checker is using the **Web Price Checker** application, which is standard available on the RP-04/05.

The name of this application speaks for itself.

In fact this is: "**Cloud Based Price Checking**"

i.e. without the need of a local store server.

To Live demonstrate the use of the WebPriceChecker there is a demo website on line.  
These are the user instructions:

1. Connect the RP-04/05 to your local network (Ethernet or WiFi) with Internet access.  
The use of DHCP is recommended.

2. The value for the Query Url must be set as above      (default setting as of V096)

**<http://demo.scantech-id.com/demo/pricecheck/{@SKTYPE}/{@BARCODE}>**

3. Scan one of the demo bar codes:

Code

Response on RP-04/05 screen



**Billy** Classic Swedish Design



Bokhylla, björkfaner  
Med smala hyllor utnyttjar du  
effektivt mindre väggytor och låter  
de små sakerna ta liten plats. Läs  
mer Storlek 40x28x106 cm

395 kr



**Jean Paul  
GAULTIER**  
Le Male  
Eau de Toilette for Men  
by Jean Paul Gaultier

à partir de **€ 41,90**





Dallmayr  
prodomo

500 gr

€ 4,79

**Special Offer**

EAN 4008167103714





Kleenex Tissues

Box of 90 pcs Kleenex Balsam tissues

Thai: ผ้าอวย

Chinese: 外情免入全具刃化區

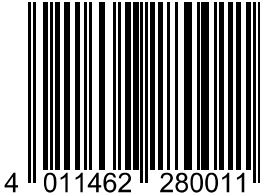
Russian: ПАМЯК НОВАЯ ЖИЗ

€ 1.75



Dutch Gold

€ 6.25



Animated GIF





## Chapter 4.3 PromoTool Application

### 1. Introduction

The **PromoTool** is an application for playing/displaying multi-media content on the RP-04/05 according to a certain schedule. It can run as a stand-alone application or as a background task which takes over when the fore-ground task switches to idle-mode (for example a Price-Checker application). The files for the media content either reside on the local file system or are accessible over the network by an NFS mount.

### 2. Concept.

The **PromoTool** consists of two parts:

1. the player **skpromo**
2. the corresponding **PromoTool** web page to control the settings for **skpromo** with a modern browser.

The **PromoTool** application is controlled by the XML-file **promoplaylist.xml**. This file contains a list of media files to be displayed (or played) with defined attributes for each play-list item.

The PromoTool is launched manually by pressing desktop icon or automatically at start-up (with the DeskTop Configurator).



When the player **skpromo** is launched, it will first look for a local directory **/apps/promo** and if it exists, **skpromo** expects to find the following set of files in there:

1. the XML-file **promoplaylist.xml**
2. a number of multi-media files of type *.jpg*, *.png* or *.bmp*.

When **skpromo** starts and file **promoplaylist.xml** exists, **skpromo** will try to extract a play-list with attributes from this XML-file. When **promoplaylist.xml** does not exist, **skpromo** will compile a temporary play-list which is based on the file order of all *.jpg* and *.png* files in directory **/apps/promo**. This condition also applies for opening the **PromoTool** web page and **promoplaylist.xml** is missing. In that case **PromoTool** will auto-fill-in a play-list and you need to select « [Update Play list](#) » to create a new **promoplaylist.xml**.

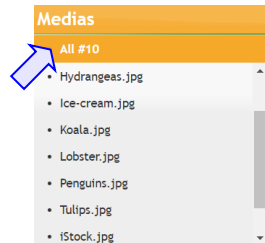
### 3. Promo Play-list.

Each item in a play-list can be a single multi-media file (or a combination of such files), with additional text (plain text or HTML). For each play-list item, the **skpromo** player will collect all content of the files associated with this item. With the **template** file **PromoTemplate.html** it will construct an intermediate HTML page which is displayed on screen. See file example **PromoTemplate.html** at the end of this chapter.

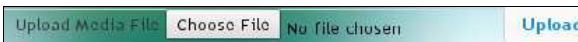
### 4. How to create a Play-list.

1. In pull-down menu « [Applications](#) », select « [PromoTool](#) ».  
This opens the web page in sub-menu « [Promotion List](#) ».

2. In section **Medias**, select « [All # 10](#) » to obtain an overview of available multi-media files.  
Files in this list are considered valid candidates for the play-list.



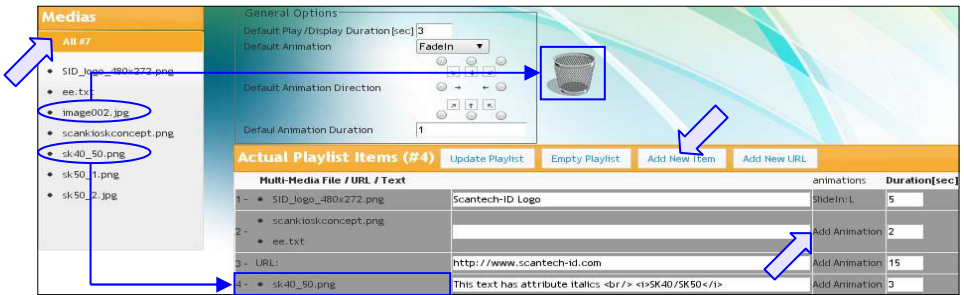
3. For adding new multi-media files to **/apps/promo**, use buttons « [Choose File](#) » and « [Upload](#) » to transfer multi-media files from your PC/laptop to directory **/apps/promo**.



Deleting a file in **Medias** is done by *drag and drop* it to the wastebasket.

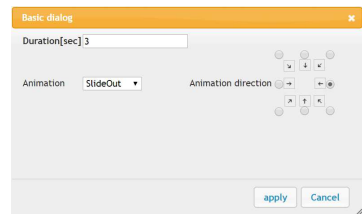
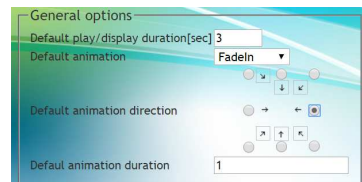
**Note:** This may not work for an NFS-mounted **/apps/promo** due to restricted write privilege on server.

To view all multi-media files residing in **/apps/promo**, select « [All # 7](#) » in section **Medias**. Optionally select « [Empty Play-list](#) » and start composing your play-list. You can either - « [Add new Item](#) » by *drag and drop* a file from section **Media's** to the blue cornered Item space - or you can « [Add new URL](#) » and define a URL string.



### Notes:

- Removing an item from the Play-list is done by drag and drop it to the wastebasket (but the item can again be added to the playlist).
- Moving an item from the Medias section to the wastebasket really deletes the item.
- In section General Options, all files in the Play-list can be given a default value for Animation, Direction and Duration. Play-list items that represent pictures are easily stitched as a slide-show. This can be done by assigning them all a default value, for example Animation:Slide-in with Direction: i.e. left to right.
- For each item in the Play-list, you can select « Add Animation » and use the Basic dialogue box to overrule the default values. The item specific values will appear in the Play-list column fields Animations and Duration[sec].



1. Re-order the **Play-list** by *dragging* and *dropping* files in your preferred displaying sequence.
2. Finally, select « **Update Play-list** » to create the new file **/apps/promo/promoplaylist.xml**.  
The existing file **promoplaylist.xml** will be overwritten.

### Notes:

1. This will not work when **/apps/promo** is NFS-mounted on a server with NFS write restrictions.
2. After « **Update Play-list** » no restart of skpromo is required to make

the changes effective; this is also applicable for changes to template file *PromoTemplate.html*, see **Templates**.

7. The play-list - here shown as an example - contains the following items:
- Multi-media file named *SID\_Logo\_480x272.png* with additional plain text.
  - Multi-media file *scankioskconcept.png* combined with text defined in file *ee.txt*.
  - An URL item <http://www.Diebold Nixdorf.com> (created with button « **Add new URL** »).

Notes:

1. Activate DHCP for your LAN/WLAN interface to ensure that the SK obtains a valid gateway for DNS to handle symbolic URL's (like <http://www.Diebold Nixdorf.com>).
  2. Valid URL's are <http://www.Diebold Nixdorf.com> and <http://169.36.191.51> but URL notation [www.Diebold Nixdorf.com](http://www.Diebold Nixdorf.com) is not supported.
- One multi-media file *RP-04/05-Design.png*.

8. Select the **PromoTool icon** on the touch screen of the SK to manually launch the **skpromo** application. When the result is OK, go to the **DeskTop Configurator** page to make **skpromo** execute immediately at start-up.



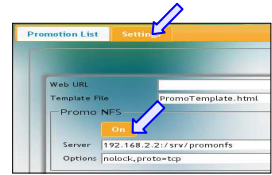
1: Fruit.jpg	2: Icecream.jpg	3: <a href="http://www.Diebold Nixdorf.com">http://www.Diebold Nixdorf.com</a>	4: Lobster_Discount.png

**5. Fetching content of multi-media files over LAN/WLAN.**

From factory, the RP-04/05 runs **skpromo** in local mode i.e. the full path **/apps/promo** refers to the local file system of the RP-04/05. For access to multi-media items placed on a centralized server you must use the features **NFS** or **Web URL**.

## 6. Multi-media file access over the Network File System (NFS).

The choice of using a centralized server for filing the promotion content for **skpromo**, simplifies the management task of updating promotional content as a regular task and it opens the possibility for further automation.



From Factory Default, the **PromoTool** and **skpromo** are configured to access local directory **/apps/promo**. To overrule the local path **/apps/promo**, select « **Settings** », in section **Promo NFS**, switch NFS « **ON** », enter the URL for the NFS-server and « **Apply** ». This will attempt to mount **/apps/promo** on the exported path of the NFS-server defined by your system administrator. Check that **nolock** is defined in the NFS **options**. Make sure that all options are in accordance with those of the NFS-server.

### Notes on the use of NFS:

1. After the « **Apply** » for a new **NFS** URL, select « **Promotion List** » and do a browser page refresh in order to update **Actual Play-list Items** (which will be according the directory content on the NFS server).
2. When the **Server** URL does not match, the error **no\_response** will appear near the top of the section.
3. Selecting « **Update Play-list** » for a **NFS** mounted **/apps/promo** with **read-only permission**, will result in an error message, shown near the top of the section: **[Errno 30] Permission denied: '/apps/promo/promoplaylist.xml'**
4. When **/apps/skpromo** is operational, it is not necessary to restart **skpromo** after an **On** (mount) or **Off** (unmount) action. For each **skpromo** item access (according the play-list), **skpromo** checks the file attribute *date* of file **promoplaylist.xml** and **skpromo** reloads the file only if the attribute changed.
5. For NFS is « **On** », the Linux kernel attempts to mount the NFS path at SK start-up (even when skpromo has not been scheduled to run at start-up). Avoiding this mount action is done by applying NFS « **OFF** ». Make sure that there are no opened files or unmount will complain (can't unmount /apps/promo: Device or resource busy).
6. The file *promo.css* is responsible for defining the background, transparency and framework of the pictures.  
This file is located on the SK itself (*/apps/config/promo.css*).
7. Accessing the media content over NFS introduces some extra network traffic. NFS takes care of the file-attributes caching and the file content caching is handled by the Linux file system (the latter depends on the available size of free memory). Simple NFS traffic tests for SK have shown that the NFS stored files are transferred only once (at start-up or after a change of file content).

## 7. Running skpromo by Web URL

Configuring PromoTool to run **skpromo** in **Web URL** mode, means that after « [Apply](#) », the PromoTool will stop using its internal promotion list and transfer the control to the virtual play-list provided by the web server.

Web URL	<a href="http://www.scantech-id.com">http://www.scantech-id.com</a>
Template File	PromoTemplate.html

It will first post a request to the entered Web URL request and wait for a reply from the web server. The content of the replied page is for example a JavaScript which sets up a continuous loop. This loop is programmed to post requests to the web server in regular intervals according to a web programmed play-list.

### Notes on the use of Web URL:

- The concept Web URL is totally different from the concept of multi-media files in **/apps/promo** and a play-list. Executing **skpromo** in **Web URL** mode will show an empty play-list in menu « [Promotion List](#) ».
- When configuring a Web Server for PromoTool, first check the URL response of the web server with your favorite web-browser.
- The internal web-kit supports **HTML-5**.

## 8. PromoTool template.

The SK uses a web-kit library to present information on the display. It does this by combining the raw information (text, pictures etc) with a local html template file. The end result is a formatted html page which is then shown on the SK display.

The default file **PromoTemplate.html** is responsible for the presentation of the promotional information on a SK display. For example: when the items in your play-list consist of a picture with a separated text attribute, the file PromoTemplate.html is responsible for putting the picture in the right place on the display with the associated text using the right font etc.

Use the following instructions for changing the behaviour of **PromoTemplate.html**:

- From web page menu « [System](#) » select « [Templates](#) »
- Download PromoTemplate.html to your PC/laptop
- Modify the content and save it to a new file with a different name.
- Use « [Choose File](#) » and « [Upload](#) » to install the new file on the SK.
- In web page « [PromoTool](#) », select « [Settings](#) » and enter the new file name in the field **Template File**.

It is also possible to edit **PromoTemplate.html** directly with your browser (not recommended):

- In « [Templates](#) », select the file you want to edit. Saving the file will overwrite the existing **PromoTemplate.html** and the changes will immediately take effect on **skpromo**.

## 9. Management of multi-media files over NFS.

(implementation pending, 11-2017)

For managing the multi-media files and *promoplaylist.xml* in an environment of the RP-04/05 connected to an NFS server, the following set-up could be used as an example.

1. Ask your system administrator to define one RP-04/05 in the remote retail environment as your controlling unit, by assigning it write privileges for the NFS mounted directory */apps/promo* on the NFS-server (default, the RP-04/05 only has read privileges).
2. Configure one RP-04/05 in your office as a stand-alone SK device that holds the multi-media files with file *promoplaylist.xml* on its local file system. This SK will act permanently as a test-SK device for preparing new promotional multi-media content.
3. Prepare your new multimedia files on your laptop, connect your browser to the test-SK, select web-page « [PromoTool](#) » to upload the new files to your test device and modify/update *promoplaylist.xml*.
4. Test the promotional content and once OK, use button « [Download Play-list](#) » to download the newly created *promoplaylist.xml* to your laptop. On your laptop a copy of the new *promoplaylist* will be added to the content files that have been tested on the test-SK.
5. Disconnect your browser from the test-SK and connect your browser to the remote RP-04/05 with write privileges on the NFS-server.
6. Select web-page « [PromoTool](#) » to upload the new multi-media files and *promoplaylist.xml*. The privileged SK will install the new content directly on the NFS-server and all other RP's will immediately take notice of the changes.

### Notes:

- This concept also works for retail environments that use only one single RP-04/05 on the work floor.
- This procedure requires PromoTool version **skpromo-0.9.3-9** or higher (see Home web page).
- The *multi-media files* and *promoplaylist.xml* do not form part of the **Template Package** that you can save and download as a .deb file.

## 10. Example PromoTemplate.html

```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN"
"http://www.w3.org/TR/html4/loose.dtd">
<html lang="en-US">
<link rel="stylesheet" href="<!--SK:$WORKDIR-->/promo.css" type="text/css" media="screen"/>
<body>

<h1> SKPromo Promotional Information</h1>

<div class="content">
<table>
<tbody>
<tr>
<td></td>
<td align="center">
<!--SK:image-->
<p><!--SK:text--><!--SK:textfile--></p>
</td>
<td></td>
</tr>
</tbody>
</table>

</div>
</body>
</html>
```

**Note:**

- The lines <!--SK:image-->, <!--SK:text--> and <!--SK:textfile--> are place holders that get substituted by the data references **skpromo** reads according to the play-list.





Home

System

Applications

Peripherals

Logout

Current location: Applications/PriceChecker

PriceChecker

1.3.4

PROTOCOL

LocalText

File name

database.ini

Pricecheck Template

local\_PriceCheckTemplate.html

Pricecheck Startpage

PriceCheckStartPage.html

Message Template

local\_MessageTemplate.html

SOAPS

SKURL

SOAP

PS

Local Text

Accepts

1d barcodes

On

2d barcodes

On

RFID tags

On

Others

On

Use Field Filtering

Filtering

No Filtering

On

Use Price Interpretation

Currency Symbol

€

Currency Separator

.

Price Decimals

2

Price Factor

1

Price elements List

price,priceval,SalePrice,Discount,standardprice,promotionprice

Welcome timer

10

0

Barcode Fill Minimumsize

10

0

Message Strings

Article Not Found

Article Not Found

Server Unavailable

Server Unavailable

Text one for Welcome page

Welcome

Text two for Welcome page

Please scan your article...

Apply

Cancel

## Chapter 4.4 SK Price Checker

### 1. Introduction

The SK Price-Checker application is used for article and price verification in retail. The input of a Price-Checker is a unique number (ID), read by a reader of barcodes or RFID tags. The scanned ID is communicated to an external service which is responsible for replying article/price information associated with the given ID.

Use the **Desktop Configurator** page to make the **Price-Checker** launch itself automatically at start-up.

The **Price-checker** default behavior is that it starts with a welcome page and the customer is invited to scan a product. When a product is read, the **Price-Checker** communicates with an external article-look-up service which will deliver the article information to be displayed on screen. This info is then displayed for a certain time.

### 2. Price-Checker and PromoTool

The **Price-Checker** application is designed to co-work with **PromoTool**. Instead of letting the Price-Checker display a passive welcome page during idle-time, the **PromoTool** will show promo content by taking over the display control.

The **PromoTool** gets temporarily interrupted when a customer scans a new article for an article look-up.

### 3. Server Communication Protocol

The Price-Checker application supports a number of communication protocols for exchanging messages between the SK and a server with an article/price database. Here is an overview of the protocols currently supported:

Protocol	License Policy	Technology	Request Structure	Service reply
SKEPS <sup>*1</sup>	Diebold Nixdorf license free	TCP/IP	Key=KeyValue	XML
SOEPS	Proprietary	TCP/IP	Key=KeyValue	XML(text only)
SKURL	Proprietary	TCP/IP/HTTP	HTTP/XML request	XML
SOAP	Open standard SOAP 1.2	TCP/IP/HTTP	HTTP/XML request	XML
RSM	Proprietary	UDP	Block structured binary	Block structured text
LOCAL TEXT <sup>*2</sup>	For Demo Purpose Only	Local File Access	String	String, Pictures

<sup>\*1</sup>: A document with detailed information on the SKEPS protocol is available at Diebold Nixdorf upon request.

<sup>\*2</sup>: Factory Default Selection.

4. Protocol related parameters

PROTOCOL ● SKEPS ● SOEPS ● SKURL ● SOAP ● RSM ● LocalText

LocalText

filename database.ini

Pricecheck Template local\_PriceCheckTemplate.html

Pricecheck Startpage PriceCheckStartPage.html

Message Template local\_MessageTemplate.html

**Local Text**

- For standalone demonstration purposes only.
- No external communication interface required.
- Uses a text based database file "database.ini" which can be downloaded, modified and uploaded, for this, see web page « [System->Templates](#) » in section **Folders**.

PROTOCOL ● SKEPS ● SOEPS ● SKURL ● SOAP ● RSM

RSM

Server Address 192.168.2.10

Server Port 345

ScanKiosk POS Station nr (Default) 0

Server WFS Station nr 1

Pricecheck Template RSM\_PriceCheckTemplate.html

Pricecheck Startpage RSM\_PriceCheckStartPage.html

Message Template RSM\_MessageTemplate.html

Codepage UTF-8 Unicode

In-Store-Codes Group 20 ☐ Price ☐ Weight

In-Store-Codes Group 21 ☐ Price ☐ Weight

In-Store-Codes Group 22 ☐ Price ☐ Weight

In-Store-Codes Group 23 ☐ Price ☐ Weight

In-Store-Codes Group 24 ☐ Price ☐ Weight

In-Store-Codes Group 25 ☐ Price ☐ Weight

In-Store-Codes Group 26 ☐ Price ☐ Weight

In-Store-Codes Group 27 ☐ Price ☐ Weight

In-Store-Codes Group 28 ☐ Price ☐ Weight

In-Store-Codes Group 29 ☐ Price ☐ Weight

**RSM**

- Proprietary
- Notes:
- The auto select feature for **POS Station nr** is useful when communicating over LAN with DHCP=On. However, the auto-selection algorithm gets sometimes confused when using WLAN and Default GateWay over WLAN.
- Remedy: determine the **POS Station nr** value and enter it manually.

PROTOCOL ● SKEPS ● SOEPS ● SKURL ● SOAP ● RSM ● LocalText

SOAP

Soap Server URL http://10.54.171.129:8732/CLinkWebAccessData/Item/

Content-Type header application/soap+xml;charset=UTF-8

SoapAction header

Item xml:tag Item

Pricecheck Template SOAP\_PriceCheckTemplate.html

Pricecheck Startpage PriceCheckStartPage.html

Message Template MessageTemplate.html

**SOAP**

- Open web service based on SOAP 1.2

PROTOCOL ● SKEPS ● SOEPS ● SKURL ● SOAP ● RSM ● LocalText

SKURL

Main URL http://192.168.2.10:50000/?barcode=

Alternate URL

Item xml:tag Iteminfo

Pricecheck Template SKURL\_PriceCheckTemplate.html

Pricecheck Startpage SKURL\_PriceCheckStartPage.html

Message Template SKURL\_MessageTemplate.html

**SKURL**

- Proprietary.
- The Alternate URL is reserved for a second server that acts as a backup. If the Main URL server does not reply within 2 seconds, the Price-Checker will try the Alternate URL and if successful, it will continue doing so.

PROTOCOL

SOEPS

Server Address: 192.168.2.10

Server Port: 6696

Item xml-tag: NormalSaleItem

Remove Checkdigit: On

Pricecheck Template: SOEPS\_PriceCheckTemplate.html

Pricecheck Startpage: SOEPS\_PriceCheckStartPage.html

Message Template: SOEPS\_MessageTemplate.html

SOEPS

- Proprietary
- Information exchange is based on a predefined list of *Key=KeyValue* variables.

PROTOCOL

SKEPS

Server Address: 192.168.2.10

Server Port: 9002

Item xml-tag: NormalSaleItem

Pricecheck Template: PriceCheckTemplate.html

Pricecheck Startpage: PriceCheckStartPage.html

Message Template: MessageTemplate.html

SKEPS

- Diebold Nixdorf standard protocol
- Information exchange is based on a predefined list of *Key=KeyValue* variables.
- Server Port number is pre-defined, but can be changed.

5. Device input control

These fields control the allowed input from installed peripheral devices (barcode reader and the RFID-reader).

Accepts

1D Barcodes

On

2D Barcodes

Off

RFID Tags

Off

Others

On

6. Use Field Filtering

The **Field Filtering** function applies to all protocols that have their message composed by XML tags or Key=KeyValue. The behaviour of the Field Filtering function in combination with the *PriceCheckTemplate* file is best explained by an example of price lookup of normal articles and discount articles.

Use Field Filtering

Filtering

Remove fields: when equal to:

**Example:** Suppose that the messages are composed by 3 tags: *T\_ArticleName*, *T\_Price* and *T\_DiscountPrice*. Normally, the content of the server message will vary with the

discount status of the scanned article i.e. the tag *TDiscountPrice* is only sent to the SK for discount articles and the output on screen will vary correspondingly (the server controls the output on screen).

For those protocols whereby the server message is always composed by a fixed number of XML tags (in this case *T\_ArticleName*, *T\_Price*, and *T\_DiscountPrice*), the **Field Filtering** option allows suppressing the unwanted tag *T\_DiscountPrice* by defining the fields as shown on the right.

Use Field Filtering

☒ Filtering ☐ No Filtering

Filtering

Remove fields:  when equal to:

With this configuration, the value of the tags *T\_DiscountPrice* and *T\_Price* are compared and the tag *T\_DiscountPrice* will be suppressed when their value equals.

By combining this *Field Filtering* with the file *PriceCheckTemplate.html*, the SK screen displays the information for articles and discount articles as below:

Article Lookup	Discount Article Lookup
<div><div>BOX TISSUES KLEENEX</div><div>Price: 4.02 €</div><div></div></div>	<div><div>BMX BICYCLE FOR CHILD</div><div>Price: 119.94 €</div><div></div><div>Discount Price: 99.95 €</div></div>
<div>T_ArticleName="BOX TISSUES KLEENEX"</div> <div>T_Price=402</div> <div>T_DiscountPrice=402</div>	<div>T_ArticleName="BMX BICYCLE FOR CHILD"</div> <div>T_Price=11994</div> <div>T_DiscountPrice=9995</div>

Extract of the corresponding *PriceCheckTemplate.html* :

```
<html lang="en-US">
.
.
<body class="/*SK:$SKTYPE*/">

<div class="name" >
  <p><!--SK:T_ArticleName--></p>
</div>

<div class="price" style="/*SK_SHOW:T_Price*/">
  <p>
    Price: <!--SK:T_Price_main--><!--SK:CurrencySeparator-->
      <!--SK:T_Price_fractional--> <!--SK:Currency-->
  </p>
</div>

<div class="discount" style="/*SK_SHOW:T_DiscountPrice*/" >
  <p><span style='font-size:40pt;color:white'>
    Discount Price: <!--SK:T_DiscountPrice_main--><!--SK:CurrencySeparator-->
      <!--SK:T_DiscountPrice_fractional--> <!--SK:Currency-->
  </span></p>
</div>
</body></html>
```

7. Price control parameters

This section deals with the price/article messages received from the server. For displaying the article/price information in a correct font size, colour, etc., a set of control parameters and a template file *protocol\_PriceCheckTemplate.html* is available for managing this.

Use Field Filtering

Filtering ☒ No Filtering

Use Price interpretation

On

Currency Symbol

€

Currency Separator

,

Price Decimals

2

Price Factor

1

Price elements List

price,priceval,SalePrice,Discount,standardprice,promotionprice

Welcome timer

10

1. Use Price Interpretation

This switch turns price interpretation/formatting *On* or *Off*. When the server replies fully formatted price information you may turn *Price Interpretation Off* and the message tag representing the price will be copied as a string to the price-field in the html-page.

## 2. Currency Symbol

Allows you to define the currency symbol. In the file ***protocol\_PriceCheckTemplate.html*** this variable refers to the symbol *SK:Currency*.

## 3. Price Decimals

Internally, the price is processed as integer in "cents". Price Decimals specifies the number of digits that make up the cents part of the price.

The price is split into two parts, based on this number of digits.

Two new tags are generated, containing the main-currency part and the fractional/cents part of the price.

The names of these tags are created by adding "\_main" and "\_fraction" to the price-tag, respectively.

Example:

priceval = 295 , Price Decimals = 2

Generated tags:

priceval\_main = 2

priceval\_fraction = 95

Note: priceval must be listed in the Price Elements List.

## 4. Price Factor

Price fields (listed in Price Elements List) are all multiplied by this number.

This is done before the "Price Decimals" is processed.

The Price Factor is typically used to convert a price specified in "float" format (2.95) to an integer value (295), to be processed further by the "Price Decimals" functionality.

Example:

Price Factor = 100

price = 2.95 is converted to price = 295

## 5. Price Elements List

The Price Interpretation will be performed only on the tags mentioned in this list.

The Price-Checker application will look in the server reply message for these (optional) tags. Hence it is not required that a reply message carries all the tags specified in the list.

### Note:

The comma separated list does not tolerate space characters around the comma separator.



## 8. Welcome Timer

After a product scan action and successful article look-up, the server replies with an article description, price etc. This information is displayed on the screen for the number of seconds specified in the **Welcome Timer** field. When this timer times out, the SK enters an idle state and by default it displays the Welcome Message. It is also possible to let the **PromoTool** application take over the display from the **Price-Checker**. For this the **skpromo** needs to run simultaneously with **skpricechecker**, see page **DeskTop Configurator 1.3.1**.

## 9. Message Strings

Four Price-Checker messages can be customized to the language of your choice. The factory default messages *Welcome* and *Please scan your article* are displayed when the Price-Checker enters idle mode. The concept of the Price-Checker is that it will only display information as provided in the server reply message. The information displayed on the screen for a successful article identification depends on the content of the reply message of the server. A set of file templates is available for defining the screen background, font color, size and attributes. See configuration page **Templates 1.2.9** for a more detailed explanation of the template concept.

**Note:** The messages are part of an HTML paragraph which you can edit in HTML, using a `<span>` section:

```
<span style='font-size:26pt;color:orange' > Veuillez vérifier la configuration <br> avant de mettre la Borne en service </span>
```



This `<span>` section will be displayed as follows:



10. Error messages

The Price-Checker application uses internal timers to check the availability of the network and the Price-Checker service running on the server. Immediately after sending a barcode request to the server, the Price-Checker application starts a timer with a time-out value of 2 seconds. If the service on the server does not reply within the 2 seconds, an error message will be displayed on the screen.

The error message (here displayed in red) is a copy of the entered text in the field **Server Unavailable** in section **Message Strings**. For the protocols SKEPS and SOEPS, the Price-Checker application is able to identify certain types of errors, see table below.

<p><b>Socket operation timed out</b></p> <p>Network (LAN or WLAN) is not available.</p>	
<p><b>Connection refused</b></p> <p>Price-Checker service on server is not available.</p>	

Notes:

1. The yellow part of the text message is unchangeable.
2. Once the Price-Checker application has entered the error mode, it keeps the error message on the display and it checks every 2 seconds if the error condition is resolved; if so, the Price-Checker application will return to normal operation (display shows welcome message again).



Home System Applications Peripherals Logout

Current location: Applications/SGPriceChecker

SGPriceChecker
1.3.6

---

SG Type ☒ SG15 ☐ SG20

**SGNET**

Server Address

Server Port

Connect Mode ☒ TCPClient ☐ TCPserver ☐ UDP

Send CodeIdentifier with Barcode

**Code Categories**

1D Barcodes

2D Barcodes

RFID Tags

Unknown Category

**General**

Foreground Colour

Background Colour

**SG15**

Idle Display Mode ☒ Text ☐ Image

Invert Display

Text Direction ☒ Left->Right ☐ Right->Left

Codepage

TAlt/THold - Display Message Time

TWait - Server Response Time

Idle Message Line 1:	<input type="text" value="Welcome"/>	Font:	<input type="text" value="large"/>	Align:	<input type="text" value="X-center Y-top"/>	X:	<input type="text" value="0"/>	Y:	<input type="text" value="0"/>
Idle Message Line 2:	<input type="text" value="Scan your product"/>	Font:	<input type="text" value="small"/>	Align:	<input type="text" value="X-center"/>	X:	<input type="text" value="0"/>	Y:	<input type="text" value="30"/>
Idle Message Line 3:	<input type="text" value="here..."/>	Font:	<input type="text" value="small"/>	Align:	<input type="text" value="X-center"/>	X:	<input type="text" value="0"/>	Y:	<input type="text" value="45"/>
Error Message Line 1:	<input type="text" value="Please contact a"/>	Font:	<input type="text" value="small"/>	Align:	<input type="text" value="X-center"/>	X:	<input type="text" value="0"/>	Y:	<input type="text" value="15"/>
Error Message Line 2:	<input type="text" value="member of staff"/>	Font:	<input type="text" value="small"/>	Align:	<input type="text" value="X-center"/>	X:	<input type="text" value="0"/>	Y:	<input type="text" value="30"/>
Offline Message:	<input type="text" value="- Offline -"/>	Font:	<input type="text" value="small"/>	Align:	<input type="text" value="X-center Y-center"/>	X:	<input type="text" value="0"/>	Y:	<input type="text" value="0"/>

## Chapter 4.5 SGPriceChecker application

### Introduction

The SGPriceChecker application is based on a proprietary protocol that has been successfully used by the previous the generation of Price-Checkers SG-20 and current SG-15. This application emulates the communication layers as in use by today's SG-20/15 Price-Checkers in retail. This compatibility feature allows customers with an installed base of SG-20/15 Price-Checkers to introduce the RP04/05 without an IT-investment for new server application software.

The **SGPriceChecker** application is designed to co-work with **PromoTool**. Instead of letting the SGPriceChecker display a passive welcome page during idle-time, the **PromoTool** will show promo content by taking over the display control. The **PromoTool** gets temporarily interrupted when a customer scans a new article for an article look-up.

### 1. SG-20 Emulation SG Type

Use the radio-button to select the SG model you decide to emulate:



### 2. SGNET

Define the fields **Server Address** and **Server Port** for connection to the host/server with application controlling the RP-04/05, for instance SGNET service.

Server Address	<input type="text" value="192.168.2.60"/>
Server Port	<input type="text" value="9101"/>
Connect Mode	<input checked="" type="radio"/> TCPclient <input type="radio"/> TCPserver <input type="radio"/> UDP

The **Connect Mode** can be **TCPclient** (ScanKiosk connects to server), **TCPserver** (server connects to ScanKiosk) or **UDP** (connection-less).

### 3. General

The foreground and background colors can here be changed from the default white on blue.

### 4. Idle Display Mode

These radio buttons allow you to change the functional behavior for displaying the idle messages defined in section **Message Table**.

Button	Idle Mode behavior
Do nothing	This produces an empty screen allowing the server to display its own messages. <b>Note:</b> Activate this button when PromoTool is running as well.
Static text	Idle Message[1] is continuously shown on display.
Static image	Fixed image is shown on display. The image file must reside in the assigned section <b>SG-20</b> . Check web page <b>Templates</b> for uploading a customized image file in to section <b>SG-20</b> . <sup>*1</sup>
Scrolling	Messages [1-5] are displayed in a fixed sequence [1-5]. When <b>SG-20</b> section contains files with (fixed) names <i>image1.jpg</i> , <i>image2.jpg</i> etc., then these images will be shown in between the text messages.

Timing

Overview of timing parameters (in seconds) with a short description:

Timer	Legend
TAlt	Display duration for each message listed in section <b>Message Table</b> .
THold	Display duration of reply message from server when scanning a barcode. For Thold = 0 the replied message stays on the screen until replaced by another.
TWait	Time SK will wait for server to reply on barcode request before displaying an error message.



5. Message Table

Messages are organized in a table with fixed numbers [1-8] and their definition is as follows:

Message	SG-20 Mode	Legend
[1-5]	Idle	These messages are displayed according the setting in <b>Idle Display Mode</b> below. In <b>Static mode</b> , only message-1 is displayed. In <b>Scrolling mode</b> , the messages[1-5] are sequentially displayed (each remain T <sub>Alt</sub> sec on screen). All messages are

		editable with a browser, messages longer than the display line length are wrapped around to the next line, empty message fields are skipped.
6	Busy	Is displayed when the server does not reply within 1 sec after sending a barcode request.
7	No Service	Shown when the SGPriceChecker service on the server is not available <sup>1</sup> .
8	Retry	Displayed when the barcode request failed because of a T <sub>Wait</sub> time-out for server reply.

<sup>1</sup> When the SGPriceChecker enters this state, it will repeatedly attempt to re-connect with the service on the server and the **NoService Message** will disappear as soon as re-connection takes place.

The values for **Line** and **Pos** refer to respectively the vertical and horizontal character offsets on the display.

Message Table				
Idle Message [1]	Scan your article	Line	0	Pos 0
Idle Message [2]	What's the price ?	Line	0	Pos 0
Idle Message [3]	Check your bonus card	Line	0	Pos 0
Idle Message [4]	Check the €uro price	Line	0	Pos 0
Idle Message [5]		Line	0	Pos 0
Busy Message [6]	One moment...	Line	0	Pos 0
NoService Message [7]	SK Offline	Line	0	Pos 0
Retry Message [8]	Please scan again	Line	0	Pos 0

### SG-20 display features for RP-04/05

- 128 x 240 pixels
- Mono-chrome
- Standby for Background Display Light
- Text wraps automatically

## 6. SG-20 <ESC><COMMAND> compatibility table.

The following table represents the list of SG-20 <ESC> commands supported by SGPriceChecker emulation.

<ESC><COMMAND>	Command Character	Legend
C_RESETDISPL	0x24	Reset Display (clear screen and cursor moves to home position)
C_CLEARDISPL	0x25	Clear screen (cursor preserves its actual position)
C_CURSORPOS	0x27	Position cursor
C_BACKSPACE	0x28	Delete previous character (destructive backspace)
C_HTAB	0x29	Insert a horizontal tab (cursor moves 4 positions to the right)
C_LINEFEED	0x2A	Insert a line feed
C_CARRIAGERETURN	0x2D	Insert a carriage return
C_SETFONTTYPE	0x3D	This 6 byte command selects font size, italic on/off, invert mode on/off and default font set assignment . <b>Note:</b> the last byte for default font set assignment is NOT supported.
C_SHOWMSG	0x39	Show internal message (preserve cursor XY position)
C_STANDBY <sup>1</sup>	0x40	De-activate back-light and scan-engine
C_WAKEUP <sup>2</sup>	0x41	Activate display back-light back and scan-engine
C_SHOWIMG	0x43	Show image
C_RESET	0x5A	NOT IMPLEMENTED
C_SHOWVERSION	0x60	Report firmware version string (currently PRD52) to host application
C_PULSE	0x7C	Activate Exit Gate relay for 0,5 sec

<sup>1)</sup> The SK has a more advanced standby scheduler that can be programmed in days/hours/minutes.

Other <ESC>commands than those shown in the table above, are read from the buffer but ignored. For example, a reply message like "<ESC>PRINT THIS" will have "<ESC>P" evaluated as an unrecognized <ESC>command and the remainder "RINT THIS" being displayed at the current cursor position.



# SG-15 emulation

## 1. SG Type

Selecting the SG-15 button loads the SG-15 menu page.

SG Type

SGNET

Server Address

192.168.2.60

Server Port

9101

Connect Mode

☒TCPclient☐TCPserver☐UDP

Send CodeIdentifier with Barcode

On

Code Categories

1D Barcodes

On

2D Barcodes

On

RFID Tags

On

Unknown Category

On

General

Foreground Colour

white

Background Colour

blue

SG15

Idle Display Mode

☒Text☐Image

Invert Display

Off

Text Direction

☒Left->Right☐Right->Left

Codepage

UTF-8 Unicode

TAlt/THold - Display Message Time

5

TWait - Server Response Time

5

Idle Message Line 1:

Welcome

Font:

large

Align:

X-center Y-top

X:

0

Y:

0

Idle Message Line 2:

Scan your product

Font:

small

Align:

X-center

X:

0

Y:

30

Idle Message Line 3:

here...

Font:

small

Align:

X-center

X:

0

Y:

45

Error Message Line 1:

Please contact a

Font:

small

Align:

X-center

X:

0

Y:

15

Error Message Line 2:

member of staff

Font:

small

Align:

X-center

X:

0

Y:

30

Offline Message:

- Offline -

Font:

small

Align:

X-center Y-center

X:

0

Y:

0

## 2. SGNET

Server Address

192.168.2.60

Server Port

9101

Connect Mode

☒TCPclient☐TCPserver☐UDP

Define the fields **Server Address** and **Server Port** for connection to the host/server with application controlling the RP-05, for instance SGNET service.

The **Connect Mode** can be **TCPclient** (ScanKiosk connects to server), **TCPserver** (server connects to ScanKiosk) or **UDP** (connection-less).

When **Send CodeIdentifier with Barcode** is on, the barcode is sent to the server with the well-known CodeIdentifier prepended to it.

### 3. Idle Display Mode



These radio buttons allow you to select between displaying a **Text** message or an **Image** when the SG-15 enters idle mode. The idle text message is defined by the reserved **Idle Message Lines[1-3]**, see below. When **Image** is selected, the SG-15 will continuously display file **image1.gif**. Gif or files of type png, jpg or bmp are also supported.

### 4. Invert Display



Default the SG-15 emulation displays **white characters** on a **blue background**. This static behavior inverts for **Invert Display « ON »**.

### 5. Text Direction



Some languages require **Right to Left** text flow direction which you can select here.

### 6. Code-page



The SG-15 installation contains 12 character sets which you can select from the **Codepage** drop-down menu. Each character set (code-page) is available in 2 font sizes.

Notes:

- Font size selection is encoded in the server reply message as an **<ESC>COMMAND**, see table below.
- Code-page selection is done by web page configuration (i.e. static).
- Code-pages are installed as files in directory `/apps/config/sg15` and are managed with the «Download » and «Upload » buttons in web page « [System->Templates](#) ».

6. Timing

SG-15 provides two time-out parameters in seconds as follows:

Timer	Legend
T <sub>Alt</sub> /T <sub>Hold</sub>	<div><div>TAlt/THold - Display message time <input type="text" value="5"/></div><div>TWait - Server response time <input type="text" value="5"/></div><p>Display duration for each <b>Idle</b> message when SK is in <b>Idle</b> mode. Display duration of reply message from server after scanning a barcode. For T<sub>Hold</sub> = 0 the replied message stays on screen until replaced by another.</p></div>
T <sub>Wait</sub>	Time the SK will wait for server to reply on barcode request before displaying an error message.

Messages

This section allows you to define 3 types of messages: **Idle**, **Error** and **Offline**. Each message has a number of reserved lines for entering text. The attributes font, align and XY offsets gives a certain freedom to visualize the messages. Table with legend for message details:

Idle Message Line 1:	<input type="text" value="Welcome"/>	Font: <input type="text" value="large"/>	Align: <input type="text" value="X-center Y-top"/>	X: <input type="text" value="0"/>	Y: <input type="text" value="0"/>
Idle Message Line 2:	<input type="text" value="Scan your product"/>	Font: <input type="text" value="small"/>	Align: <input type="text" value="X-center"/>	X: <input type="text" value="0"/>	Y: <input type="text" value="30"/>
Idle Message Line 3:	<input type="text" value="here..."/>	Font: <input type="text" value="small"/>	Align: <input type="text" value="X-center"/>	X: <input type="text" value="0"/>	Y: <input type="text" value="45"/>
Error Message Line 1:	<input type="text" value="Please contact a"/>	Font: <input type="text" value="small"/>	Align: <input type="text" value="X-center"/>	X: <input type="text" value="0"/>	Y: <input type="text" value="15"/>
Error Message Line 2:	<input type="text" value="member of staff"/>	Font: <input type="text" value="small"/>	Align: <input type="text" value="X-center"/>	X: <input type="text" value="0"/>	Y: <input type="text" value="30"/>
Offline Message:	<input type="text" value="- Offline -"/>	Font: <input type="text" value="small"/>	Align: <input type="text" value="X-center Y-center"/>	X: <input type="text" value="0"/>	Y: <input type="text" value="0"/>

Message	SG-15 Mode	Legend
Line[1-3]	Idle	These messages are displayed when for <b>Idle Display Mode</b> button <b>Text</b> is selected (each message remains T <sub>Alt</sub> sec on screen). All messages are editable with a browser. Messages longer than the display line length are wrapped around to the next line, empty message fields are skipped.
Line[1-2]	Error	Is displayed when the server does not reply within T <sub>Wait</sub> second

		after sending the barcode request.
Line[1]	Offline	Shown when the SGPriceChecker service on the server is not available <sup>1</sup> at start-up. The SG-15 emulation stays in this mode until the server connection returns.

**Notes:**

- The number of characters you can display per line depends on the font size and the code-page. Wrap-around of text is NOT supported so extra characters beyond this number are not or partly displayed.
- Defining a new message string page is done with a browser, which will use the locally defined code page of your PC or Laptop. When clicking «Accept » the SG-15 emulation will re-map the entered string according to the selected SG-15 code page.

**SG-15 display features for RP-04/05**




- 64 x 128 pixels
- Mono-chrome
- Standby for Background Display Light
- No text wrap-around

## 10. SG-15 <ESC><COMMAND> compatibility table

The following table represents the list of SG-15 <ESC> commands supported by SGPriceChecker emulation.

<ESC><COMMAND>	Command Character	Legend
C_CLEARDISPL	0x25	Clear screen (clear screen and cursor moves to home position i.e. Top-Left)
C_CURSORPOS	0x27	Position cursor (X[0-15], Y[0-4])
C_ALIGN	0x2E	Align a string of text: Left-Top, Center-Top, Right-Top etc.
C_STANDBY <sup>1</sup>	0x40	De-activate TFT-backlight and scan-engine
C_WAKEUP <sup>1</sup>	0x41	Activate TFT-backlight and scan-engine
C_SETFONT	0x42	Select between font size-1 or -2
C_PIXELPOS	0x44	Set Pixel Position (X[0-127], Y[0-63])
C_SHOWGIF	0x58	Show image[1-4] (can be gif, jpg, png bmp).
C_RESET	0x5A	SGPriceChecker restarts by parent process (launcher)
C_SCANNING	0x5B	Disable and Enable scanning by scan-engine: NOT IMPLEMENTED
C_BACKLIGHT	0x5C	Enable/Disable display backlight
C_BEEP	0x5E	Internal speaker will beep
C_SHOWVERSION	0x60	Report firmware version string (currently SG15V03.14) to host application
C_REROUTE	0x70	Reroute Ethernet/WLAN communication to serial port: NOT IMPLEMENTED
C_PULSE	0x7C	Activate Exit Gate relay for 0,5 sec. The SG-15 emulation will reply an ACK (0x06).

<sup>\*1</sup> The SK has a more advanced standby scheduler that can be programmed in days/hours/minutes.



Barcode reader

1.4.1

Home

System

Applications

Peripherals

Logout

Scanner Operating Mode  
Managed

Internal scanner configuration

1D Symbolologies

EAN/UPC

On

Code 128

Off

Code 93

Off

Code 39

Off

Codabar

Off

Interleaved 2 of 5

Off

MSI/Plessey

Off

GS1 Databar

Off

GS1 Databar Expanded

Off

GS1 Databar Limited

Off

2D symbolologies (Only applicable when 2D scanner installed)

Off

QR code

On

Aztec

Off

Datamatrix

Off

Maxicode

Off

PDF417

On

MicroPDF417

Off

Miscellaneous

Off

Double read time

500

Scan Illumination level (2d)

4

Low Light Motion Detection (2D only)

Off

Alternate Barcode Mode

Off

Apply

Test

Cancel

Managed

Transparent

Fixed

Off

Min./Fixed Length

4

Italian Pharmacy (Code32)

Off

Fixed

Off

Min./Fixed Length

6

Fixed

Off

Min./Fixed Length

8

## Chapter 5 Configuring the Barcode reader

### Introduction

The RP-04/05 is equipped with a 2D Imaging barcode reader.

At startup, the RP-04/05 detects what type of barcode reader is installed and it will auto-configure the device according the settings on the Barcode Reader page.

### Double Read Time

This time value (in milli seconds) represents the minimum time between reading one and the same barcode twice. The minimum time for reading two different barcodes after each other is less than 200 msec for an Omni scanner.

### Scan Illumination Level

For reading barcodes in a dim lighted environment, extra illumination is needed for the 2D scan-engine. The illumination is adjustable and the number of levels depends on the 2D scan-engine (max. 5 levels, including illumination=Off).

Use the **Test** button to check the adjusted level and then **Apply**.

### Transparent Mode

With Transparent Mode the scanner setting can be manually configured to fulfill customer specific requirements, as for instance the bar code message format.

When selecting Transparent Mode:

- Manually configure (adapt) the scanners' settings through bar code programming.
- The scanner must be set for 19k2 Baud and
- In the Price Checker application -under Accepts- select:Others or Unknown Category

### Notes:

1. Since the bar code reader configuration web page is not meant to replace the reader Configuration Manual, only the most important symbology settings can be changed.
2. The RP-04/05 fully manages the scan engine settings for stable and consistent product behaviour.



Home

System

Applications

Peripherals

Logout

Current location: Applications/Desktop configurator

Desktop configurator

1.3.1

you can change file location by drag & drop.  
you can delete the file by clicking the icon

upload directory size 130940 kb

maximum available size 4653528 kb

Informations

		Add new item	Add new item
		Add new item	Add new item
		Add new item	Add new item
		Add new item	Add new item
Add new item	Add new item	Add new item	Add new item

Path ScanKiosk

Hidden items

- Handscanner
- RFID-Scanner
- Scanner



**Chapter 6 Desktop Configurator Which application(s) start at power up.**

Through the Desktop Configurator you select which application starts after power-up.

WebPriceChecker:		The recommended app to integrate the RP-04/05
PromoTool:		Digital Signage Function
PriceChecker:		The generic SK PriceChecker application featuring 4 datacommunication protocols
SGPriceChecker		SG-20 and SG-15 Emulation

**Example**

This is the procedure to select the Web Price Checker as the start-up application after power-up:


- See web page Applications/DeskTopConfigurator, illustration left
- Click on the icon 
- Edit item
- app/skweb is selected and
- Set to Start at Boot is True
- Accept

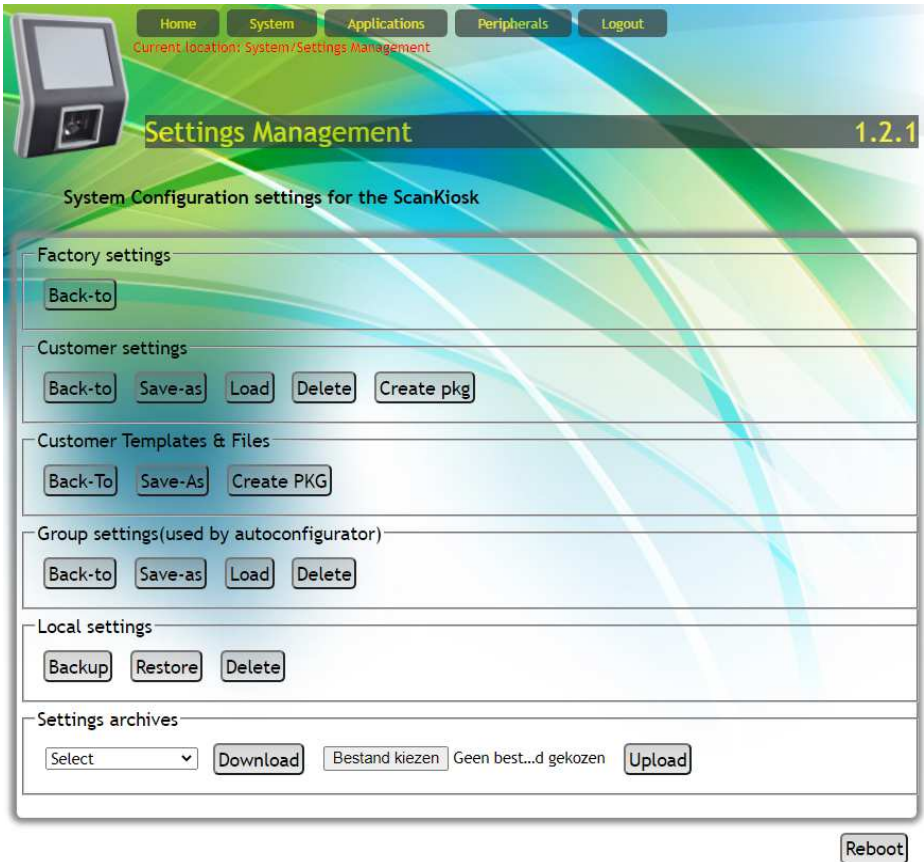
Illustration:



**Note:**

These Desktop settings are saved in the **Customer Settings** section. For any desktop setting you want to install on other RP's, go to page « [Settings Management-> Customer settings](#) », select « [Create pkg](#)<sup>\*1</sup> » which downloads a file *RP-customer-settings-\_0.9.1\_armhf.deb* on your PC/laptop.

<sup>\*1</sup>: pkg stands for package.



AutoConfigurator -as mentioned on the System Configuration page- is not implemented in the RP-04/05 MK-II.

# Chapter 7 Exporting, Importing and Distribution of Settings

## The Concept of Pre-Installation

This concept is meant for companies responsible for the pre-installation of the RP-04/05 's.

Note that the configuration phase of RP-04/05's is usually done prior to the physical installation onsite.

## Procedure to create and duplicate RP-04/05 MK-II settings.

Reference: RP-04/05 MK-II with firmware ≥ V097.

Summary of the procedure:

- |   |            |
|---|------------|
| • Set-up a reference unit RP-04/05                                | Step 1 - 3 |
| • Create 2 reference settings files                               | Step 4     |
| • Distribute the settings files in the RP-04/05's to be installed | Step 6 - 8 |

1. Use a cross-cable and your browser to login on a RP-04/05 MK-II.

Reference: Chapter 3 for details.

Username and Password: **skadmin** and **skadmin**.

2. Configure a reference RP-04/05 MK-II according the settings required for the specific project: (LAN/WLAN interface settings, Price-Checker application configuration etc.

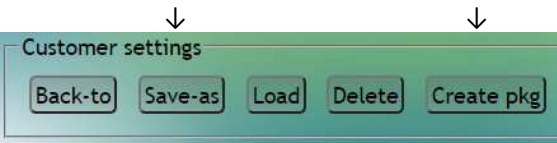
3. Verify that the configuration is 100% correct by testing the connectivity with a backoffice server.

4. Your reference RP-04/05 is now ready.

A. Go to page [System - Settings Management](#)

In section **Customer Settings**

press: [Save-As](#) followed by [Create pkg](#) (pkg stands for Package)



This action launches a pop-up window which will prompt for an identification string for assigning a unique name to the .deb download file, for example:

*RP-customer-settings-**ProjectNameNo**\_0.9.1\_armhf.deb.*

This file will be downloaded in the predefined download directory of your browser.

B1. If you modified **Template** files or uploaded your own template files (as mentioned in step-2),

then you also have to create a reference file with **Templates** settings.

Go to configuration page [System - Settings Management](#) and select



Again a pop-up will prompt you to enter an identification string for the .deb download file, for example: *RP-customer-templates-**ProjectNameNo**\_0.9.1\_armhf.deb.*

The files:

*RP-customer-settings-**ProjectNameNo**\_0.9.1\_armhf.deb.* and

*RP-customer-templates-**ProjectNameNo**\_0.9.1\_armhf.deb* are your reference files for configuring other RP-04/05's.

5. Disconnect the configured RP-04/05 (your reference unit) and connect an RP-04/05 with Factory Default Settings as described in step-1.

6. Go to Configuration Page [System-> Package Manager](#), select « [Choose File](#) » and a file selection window will pop-up.

Select the file *RP-customer-templates-**ProjectNameNo**\_0.9.1\_armhf.deb.*, « [Apply](#) » and wait for the settings to be loaded, installed and the configuration web page to return.

7. Repeat this for the file *RP-customer-settings-**ProjectNameNo**\_0.9.1\_armhf.deb.*

A short pop-up on the RP-04/05 display will indicate that the customer settings are being installed and executed.

Wait for this pop-up to disappear, before removing power.



Note: When the LAN/WLAN network settings changes (as a result of the Customer Setting), you may lose your connection.

Solution: Match the network settings of your PC.

8. Once the installation of the two packages is finished, the new RP-04/05 will operate with exactly the same settings as the reference RP-04/05.

9. If required, modify the IP address of LAN/WLAN.

10. Go to page [System - Settings Management](#), in section **Local Settings** select « [Backup](#) ».

This allows easy recovery of the **Local settings**, should something go wrong at a later stage.

After this, the RP-04/05 is ready for use.

11. Repeat steps 5 to step-10 for the remaining RP-04/05's to be installed.

**Note:**

AutoConfigurator -as mentioned on the System Configuration page- is not implemented in the RP-04/05 MK-II.



HomeSystemApplicationsPeripheralsLogout

Current location: System/Stand-by scheduler

Stand-by scheduler1.2.11

Scheduler

SchedulerOn

Time to enter standby (hh:mm)	Time to leave standby (hh:mm)	Time to reboot (hh:mm)
Monday21:00	Monday06:00	Monday06:10
Tuesday21:00	Tuesday06:00	Tuesday06:10
Wednesday21:00	Wednesday06:00	Wednesday06:10
Thursday21:00	Thursday06:00	Thursday06:10
Friday21:00	Friday06:00	Friday06:10
Saturday21:00	Saturday06:00	Saturday06:10
Sunday21:00	Sunday06:00	Sunday06:10

Stand-by onStand-by offApplyCancel

## Chapter 8 Stand-by Scheduler

---

The **Stand-by Scheduler** is designed to reduce RP-04/05 power consumption to a minimum during non-operational periods and to extend the product lifetime. The two biggest energy consumers in a RP-04/05 are the color display and the scan-engine (omni-directional or 2D-Imager). In stand-by mode, the background light of the color display and the scan-engine are turned off.

The power reduction is about 50% and the long term effect is an improved MTBF.

The **Stand-by scheduler** is enabled when the **Scheduler** « **On/Off** » button is set to **On**. This makes the fields in the Monday to Sunday time table editable for defining your own stand-by time table.

With the buttons « **Stand-by On** » and « **Stand-by Off** » you can manually force the RP-04/05 to the desired Stand-by state (temporary). The SK will stay in this state until the stand-by scheduler reaches one of the programmed time values (the scheduler must be active for this).

### Notes:

1. The timing accuracy of scheduled stand-by actions is determined by the accuracy of the **Time & Date** setting of the SK. It is therefore recommended to use the Stand-by Scheduler together with the NTP-client service for maintaining a correct time. The NTP-client service updates the time once per 24 hours.
2. While the RP-04/05 is in stand-by mode, the RP-applications continue executing (especially the LAN/WLAN services including those related to remote package upgrade, browser login sessions etc.).
3. The touch screen stays operational.
4. The energy consumption reduction for an RP-05 with Omni-scan-engine in stand-by is about 50%.

# Appendices

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**APPENDIX A      FACTORY DEFAULT SETTINGS**

Currently the Factory Default Settings of the RP-04/05 are as follows:




Network: DHCP	Enabled
IP Address (when no DHCP service)	192.168.2.200
Subnet mask	255.255.255.0
Default Gateway	192.168.2.254
Display Message Timeout	10 seconds
WiFi mode	Infrastructure
WPA Key	empty
WiFi SSID	empty
WiFi Authentication	wpa-psk
Real time clock	NTP Client enabled, Universal timezone
Bar Code Symbologies active	EAN-13, EAN-8, UPC-A, UPC-E, QR, PDF-417

The RP-04/05 can be returned to Factory Default Settings by:

- the button on the Settings Management Configuration Page or
- the special Control Barcode 011 in Appendix F.

APPENDIX B    UPDATING APPLICATIONS OR SYSTEM PACKAGES

This is the procedure to update applications or system packages:

Step	Explanation	Illustration
1	Login on the RP-04/05 and navigate to the <b>Package Manager</b> configuration page.	
2	Choose File	
3	Locate the file  [name]_[version]_ armhf.deb  and click Apply	
4	Response, indicating the package is transferred, unpacked and installed:  The loading time depends on the nature of the package.	
5	Positive acknowledgment:	
6	Reboot the RP-04/05	



APPENDIX C      TECHNICAL SPECIFICATIONS

RP-04/05 MK-II	
System Architecture	
Processor	ARM Cortex-A7 Dual-core CPU
Operating Platform	Linux 3.4
Memory Flash	8 GB
Memory RAM	1 GB
Output Media	
Display Size	RP-05: 5.7"    and    RP-04: 4.3"    diagonal
Brightness	500 nits
Resolution	RP-05: 640X480    RP-04: 480X272    16 million colours
Touch Screen	Resistive
Graphics Supported	PNG, JPEG, GIF, BMP
Audio Supported	WAV, WMA, MP3
Video Supported	MPEG-4, H.264
Audio	High Definition Stereo (16-bit PCM 44.1kHz)
Loudspeakers	High Quality loudspeakers for superior audio performance
Data Ports	
µSD Card Slot	X 1
USB 2.0 ports	X 2
LAN port 10/100 MB	X 1
RS-232 port	Console port For internal Champtek/Diebold Nixdorf use only
Power Over Ethernet feature	Optional
Entry/Exit Gate Control Function GPIO	GPIO 2-pin connector  Standard on board as of the RP-04/05 MK-II

Network Interface	
Wired LAN	<ul style="list-style-type: none"> <li>• Ethernet: 100MB Base-TX/10MB Base-T (802.3) standard on board</li> <li>• Power over Ethernet IEEE 802.af Optional</li> <li>• Two network LED indicators in the LAN connector</li> </ul>
Wireless LAN	<p>Ex-factory through Wi-Fi module</p> <p>WiFi IEEE 802.11 ac a/b/g/n</p> <p>Supporting dual band 2.4 and 5 GHz frequency</p>
WiFi Encryption Protocols	WPA PSK and WPA Enterprise security
Data Input	
Scanner Possibilities	<ul style="list-style-type: none"> <li>• Omni Directional Laser Scanner: High Speed, hi sensitive and omni-directional scanning. Reading of fragmented bar codes. Visible laser diode 635 nm. Scan pattern: 6 direction scan field, 24 lines. Scan rate: 2000 scans/sec Up to 300 mm @ UPC/EAN 100%, PCS 90% or:</li> <li>• 2D Imager : Visible Red light 650nm Scan rate: 200scans/sec auto adaptive in linear mode, 56 images/sec auto adaptive 2D mode.  Resolution: 752 Hor. X 480 Vert. pixels, 256 gray levels.</li> </ul>
Symbologies Supported	<ul style="list-style-type: none"> <li>• Omni Directional Laser Scanner: EAN/UPC/JAN + Add-on, ISBN, Code 128, EAN 128, Code 93, Code 39, Code 32, Codabar, Interleaved 2 of 5, MSI-Plessey and GS1 DataBar.</li> <li>• 2D Imager: 1D Symbologies: EAN/UPC, Australian Post, Aztec, BPO, Canada Post, Dutch Post, EAN.UCC Composite, Interleaved 2 of 5, Japan Post, MSI Code, Planet, Plessey Code, Postnet, GS1 Databar, Standard 2 of 5, Telepen, TLC 39 2D Symbologies: Datamatrix, Matrix 2 of 5, Maxi 2 of 5, MicroPDF417, PDF417, Maxicode, QR code</li> </ul>
Scan Pattern Orientation	For maximum User Convenience, the scanner can be adjusted in 6 steps over an angle of 30° and locked.

Power Requirements	
Power Supply Voltage	+12 VDC ± 10%
Power Consumption	Nominal: 1.15A @ 12VDC (standard configuration)

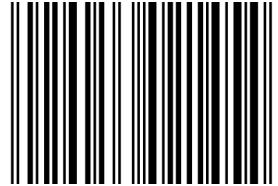
Physical	
Dimensions (H x W x D)	238 x 253 x 72mm
Weight	1.2 kg
Mounting	VESA 75mm bracket mounting
Environmental	
Operating Temperature	0° ~ 40°C (32° ~ 104°F)
Storage Temperature	-20° ~ 60°C (-4° ~ 140°F)
Humidity	5% ~ 95% RH (non-condensing)

## APPENDIX D RP-04/05 DEMO PROGRAMS

There are **three** ways to demonstrate and test the RP-04/05 in a quick way:

1. By using the WebPriceChecker application together with the on-line demo website. Chapter 4.2 describes the details.
2. Stand Alone Price Checking Quick Demo

- Select the Price Checker App<sup>\*1</sup> on the Desktop:



- Scan the barcode at the right or one of the demo barcodes in Chapter 4.2.
- The RP-04/05 will show the product name, fonts demo, product picture and price.

<sup>\*1</sup>: The RP-04/05 is Factory Default set for: Local Text demo database

### 3. SKWEBSERVER.

Example Server Software , including Source Code and CSV database.  
Available upon request.

## APPENDIX E WiFi info

This RP-04/05 WiFi version (Ref: The units' PartNumber and Serial Number label) carries the WiFi technology on the motherboard achieving the following goals:

- Support of modern WiFi standard IEEE 802.11 a/b/g/n/ac  
Choice of dual band 2.4GHz and 5GHz.
- More compact, less components and energy
- Use latest technology also applied in modern tablets and PC's

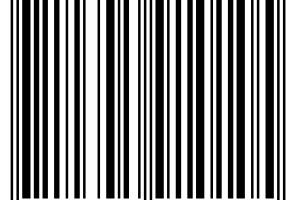
RP-04/05 mounting recommendation concerning WiFi Network coverage:  
Make sure that the installation location is well covered by the existing local WiFi network.

## Appendix F RP-04/05 Control Bar Codes

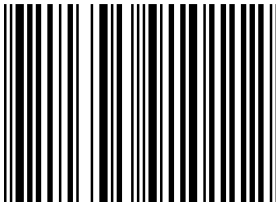
To make life easier for those who test, install and maintain the RP-04/05, we have implemented a series of Control Barcodes in the RP-04/05:



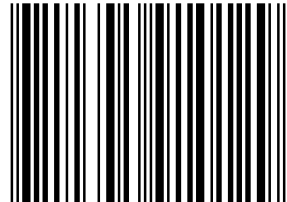
002 Close Application(s)  
and Go to the DeskTop



010 Reboot



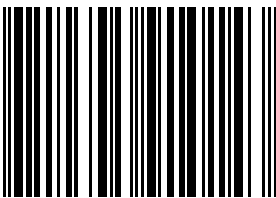
011 Back To Factory Default Settings



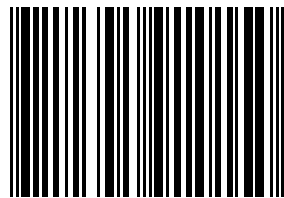
012 Back To Customer Default Settings

### **WARNING:**

This will empty the settings layers:  
Customer, Group and Local !!

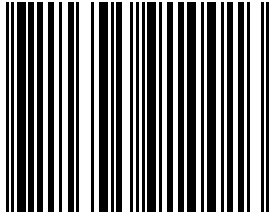


014 Restore Factory Templates  
Same function as the button on the Templates  
Configuration Page 1.2.1.



015 Restore Customer Templates  
Same function as the button on  
Configuration Page 1.2.1





001 Show the RP-04/05 Status

## Appendix G Identifying the RP-04/05 MK-II

In case you have been using to the original version of the RP-04/05 in the past; this is the way to recognize the RP-04/05 MK II:

- A. The product partnumber starts with: 738A8... or  
738AE..

See Product ID label on the back of the unit.

- B. The appearance of the SK desktop, which is (default) visible after power-up:







