
Scantech ID Scan Kiosk SK-100 Lite Linux



SK-100 Lite Linux TCP/IP Message Protocol SKEPS

1 SKEPS

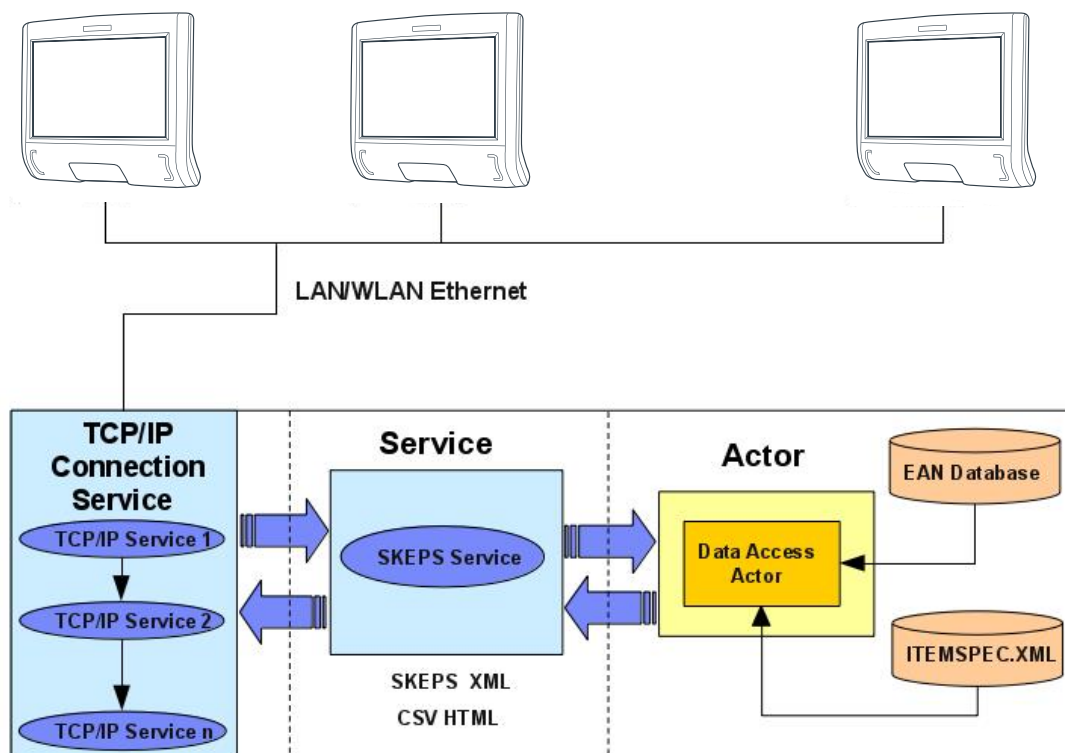
SKEPS is the default communication protocol of the Scantech-ID Scan Kiosk SK-100 Lite Linux. Ref: SK Configuration Web Page 1.3.4 and Configuration Manual Chapter 4.4 SK Price Checker. S.K.E.P.S. stands for “Scan Kiosk Exchange Protocol for Sockets” and is used to exchange messages over a TCP/IP connection with a server. The connection for this service can be established over 2 reserved port numbers.

TCP/IP Client Service port: 9002

On the server, the TCP/IP Client Service listens to local port 9002 for inbound requests from clients that communicate with SKEPS. Inbound request messages are passed to the associated Actor for processing. The response is passed back to the client through the established TCP/IP socket connection, which is then closed.

Persistent TCP/IP Client Service port: 9003

The Persistent TCP/IP Client Service listens to a local port 9003 for inbound requests from clients that communicate with SKEPS. Inbound request messages are passed to the associated Actor for processing. The Response is passed back to the client through the established TCP/IP socket connection. Unlike the TCP/IP Client Service, this service does not close the connection.



2 Message composition for SKEPS.

Field	Size	Type	Notes
Message Length	4 bytes	Signed integer 32 bit Big Endian	Binary representation of the total size of the message in bytes excluding this field.
SKEPS	5 bytes	UTF-8 text	Fixed text for protocol identification.
~	1 byte	UTF-8 text	Fixed character to identify the start of Property/Value pair section.
Property/Value pairs	N bytes	UTF-8 text Format: Property=Value	Zero or more Property/Value pairs can be provided. Each Property/Value is terminated with a pipe () character, including the last pair. Property names and their values may not include an equals (=), tilde(~), space() or pipe() character.
~	1 byte	UTF-8 text	Fixed character that indicates the end of the Property/Value pair section.
PayLoad	N bytes	TXT UTF8 XML HTML CSV MIME BINARY JPG PNG GIF	Zero or more bytes representing the payload of the message. Binary is reserved for undefined data format

SKEPS messages can be handled by different Actors (for instance a database-actor and a file-actor). To distinguish between messages for different actors, the *Message-Profile-Id* property is used.

3 Overview of Property/Value pairs

Property	Property Value	
<i>Message-Profile-Id</i>	SKA-1D SKA-2D SKA-RFID SKA-F	Scan Kiosk request for Actor 1-Dimensional barcode Scan Kiosk request for Actor 2-Dimensional barcode Scan Kiosk request for Actor Radio Frequency Identification Tag Scan Kiosk request for Actor File
<i>SK-ID</i>	Unique Identification of the ScanKiosk (MAC address of Ethernet on main-board).	
<i>SK-Type</i>	SK40 SK50	The SK identifies itself as an SK40 as an SK50
<i>Message-Counter</i>	Sequence number of this message.	
(i) <i>Fault-Count</i>	Is only sent by server and is normally zero. If non-zero, the non-zero value may represent an error number and the Payload field may contain a error explanation, trace dump etc.	
	Fault-Count	Legend
	0	No error
	1	Item not found
	2 - 5	Reserved
(iv) <i>Code-Type</i> for	SKA-1D	EAN13 EAN8 UPCA UPCE C128 GS10MNI GS1EXP GS1LIM
	SKA-2D	PDF417 PDF41 DATAMATRIX AZTECCODE QRCODE

	SKARFID	ISO14443A ISO14443B ISO15693
<i>Code-Content</i> (ii)(iv)	UTF-8 data delimited by double quotes	
<i>FilePath</i> (v)	Path name delimited by double quotes.	
<i>PayLoad-Format</i> (iii)	TXT, UTF8, XML , HTML, CSV, JPG, PNG, MIME, BINARY	

- i. Only sent by server.
- ii. An SKA request of type 1D, 2D or RFID carries the code data either in *Code-Content* or in *PayLoad*, in the latter case the *PayLoad-Format* must be specified.
- iii. Only specified if *PayLoad* is used. **IMPORTANT:** SKEPS version06 supports only the formats written in bold.
- iv. Only used for SKA-1D/2D/RFID messages
- v. Only used for SKAF messages

4 Special SKEPS commands related to remote hardware control SK40/50

A set of special commands is defined to control some of the General Purpose Output lines in an SK40/50.

Exit Gate (i)	There are two XML tags defined to control the optional Exit Gate hardware:		
	XML Tag	Parameters	Output Action
	<Exit Gate>	ON/OFF or OPEN/CLOSE INT (trigger-time in msec)	ON/OPEN activates output permanently (OFF/CLOSE de-activates) Output is asserted for INT milliseconds
LCD Light	Controls LCD Back Light for saving power and lifetime		
	XML Tag	Parameters	Output Action
	<LCDLight>	ON/OFF	switches LCD back light ON or OFF.

- i. Requires an SK40/50 equipped with special Exit Gate hardware

5 REQUEST AND RESPONSE EXAMPLES:

Example 1: Normal 1D barcode sequence

Request sent by SK-100 Lite

Signed Int.	
Header	SKEPS~Message-Profile-Id=SKA-1D SK-ID=0013b7ff1006 SK-Type=SK40 Message-Counter=123 Code-Type=EAN13 Code-Content="3080920100360" ~

Server replies with:

Signed Int.	
Header	SKEPS~Message-Profile-ID=SKA-1D SK-ID=0013b7ff1006 Message-Counter=123 Fault-Count=0 PayLoad-Format=XML ~

PayLoad (i)	<pre><?xml version="1.0" encoding="UTF-8"?> <NormalSaleItem> <ItemCode>3080920100360</ItemCode> <SalePrice>00080</SalePrice> <ItemName>BAGUETTE 250GR. </ItemName> </NormalSaleItem></pre>
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i. PayLoad data is here displayed in a readable layout.

Example 2: 1D barcode with complex content

Request sent by SK-100 Lite

Signed Int.	
Header	SKEPS~MessageProfile-Id=SKA-1D SK-ID=0013b7ff10a2 SK-Type=SK50 Message-Counter=731 Code-Type=C128 PayLoad-Format=UTF8 ~
PayLoad	STOCK-A"07885810149"

Server replies with:

Signed Int.	
Header	SKEPS~MessageProfile-Id=SKA-1D SK-ID=0013b7ff10a2 Message-Counter=731 Fault-Count=0 Code-Type=C128 PayLoad-Format=HTML ~
PayLoad (i)	<pre><html> <body> <h1>Stock-A</h1> <p>BAGUETTE 250GR., 74 in stock</p> </body> </html></pre>

i. PayLoad data is here displayed in a readable layout.

Example 3: 1D barcode with error

Request sent by SK-100 Lite

Signed Int.	
Header	SKEPS~MessageProfile-Id=SKA-1D SK-ID=0013b7ff10a2 SK-Type=SK50 Message-Counter=124 Code-Type=UPCA Code-Content="07885810149" ~

Server replies with:

Signed Int.	
Header	SKEPS~MessageProfile-Id=SKA-1D Fault-Count=1 SK-ID=0013b7ff10a2 Message-Counter=124 Code-Type=UPCA Code-Content="07885810149" PayLoad-Format=TXT ~
PayLoad	"Requested item not available!"

Example 4: File request

Request sent by SK-100 Lite

Signed Int.	
Header	SKEPS~Message-Profile-Id=SKA-F SK-ID=0013b7ff10a2 SK-Type=SK50 FilePath="Pictures/07885810149.jpg" ~

Server replies with:

Signed Int.	
Header	SKEPS~Message-Profile-Id=SKA-F Fault-Count=0 SK-ID=0013b7ff10a2 File-Path="07885810149.jpg" PayLoad-Format=JPG ~
PayLoad	Binary content of 07885810149.jpg

Example 5: 2D barcode with complex content

Request sent by SK-100 Lite

Signed Int.	
Header	SKEPS~Message-Profile-Id=SKA-2D SK-ID=0013b7ff10a2 SK-Type=SK50 Message-Counter=12 Code-Type=QRCODE PayLoad-Format=UTF8 ~
PayLoad	http://www.scantech-id.com/search?q="scankiosk example"

Server replies with:

Signed Int.	
Header	SKEPS~Message-Profile-Id=SKA-2D SK-ID=0013b7ff10a2 Message-Counter=12 Fault-Count=0 Code-Type=QRCODE PayLoad-Format=HTML ~
PayLoad (i)	<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN" "http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd"> <html xmlns="http://www.w3.org/1999/xhtml"> <head> <meta http-equiv="Content-Type" content="text/html; charset=iso-8859-1"/> <title>404 - File or directory not found.</title> </head> <body> <div id="header"><h1>Server Error</h1></div> <div id="content"> <div class="content-container"><fieldset> <h2>404 - File or directory not found.</h2> <h3>The resource you are looking for might have been removed, had its name changed, or is temporarily unavailable.</h3> </fieldset></div> </div> </body> </html>

i. PayLoad data is displayed in a readable layout.

Example 6: Exit Gate barcode request

Request sent by SK-100 Lite

Signed Int.	
Header	SKEPS~Message-Profile-Id=SKA-1D SK-ID=0013b7ff1006 SK-Type=SK40 Message-Counter=483 Code-Type=EAN13 Code-Content=" 9830000112424" ~

Server replies with:

Signed Int.	
Header	SKEPS~Message-Profile-ID=SKA-1D SK-ID=0013b7ff1006 Message-Counter=173 Fault-Count=0 PayLoad-Format=XML ~
PayLoad ⁽ⁱ⁾	<?xml version="1.0" encoding="UTF-8"?> <NormalSaleItem> < ExitGate> 5 </ExitGate> </NormalSaleItem>

i. PayLoad data is here displayed in a readable layout.

6 Document Version Control:

Vers.	Date	Legend	By
01	15-07-11	Initial draft	jfk
02	17-08-11	- Changed meta character <i>space</i> () to <i>pipe</i> () - Changed definition of pair values <i>Request-Type</i> and <i>Code-Type</i> . - Added pair value <i>File-Path</i> .	jfk/nvd
03	23-08-11	- Changed protocol name (=SKEPS). - Both client and server can use the PayLoad field for exchanging data.	jfk/nvd
04	04-11-11	- Differentiate messages based on message-profile-id, - Added SK-ID & Message-counter properties	nvd/jfk
05	04-03-13	- Added ValuePair <i>SK-Type</i> - Definition of <i>Fault-Count</i> further defined.	jfk/nvd
06	07-05-13	- Added specification for controlling Exit Gate and LCD back light.	jfk/nvd
	01-12-17	SK-100	

Due to Scantech's continuing product improvement programs, specifications and features are subject to change without prior notice.

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