YSoft SafeQ® Terminal UltraLight

Administrator's Guide

Version 1.5

making the MFDs think™

TABLE OF CONTENTS

1   INTRODUCTION

1.1   PURPOSE OF DOCUMENT

This documentation provides essential information on installation, configuration and administration of **YSoft SafeQ® Terminal UltraLight**. It covers both YSoft SafeQ® Terminal UltraLight Print & Copy and YSoft SafeQ® Terminal UltraLight Print Only versions.

1.2   GOALS AND OBJECTIVES

The YSoft SafeQ® Terminal UltraLight is a low-price version of Terminal Professional. YSoft SafeQ® Terminal UltraLight provides compact, fast and simple user interface for authorization to printer and copier and workflow improvements such as follow me feature, print job management, self-serve printing and copying and scan workflow improvements. It has no display available; therefore user interaction is limited to status leds and keyboard. User authentication is possible with card or pin.

As already mentioned the YSoft SafeQ® Terminal UltraLight is produced in two versions:

- YSOFT SAFEQ® TERMINAL ULTRALIGHT PRINT & COPY
- YSOFT SAFEQ® TERMINAL ULTRALIGHT PRINT ONLY

Picture 1 - YSoft SafeQ Terminal UltraLight Print & Copy

Picture 2 - YSoft SafeQ Terminal UltraLight Print Only

Compatibility with following YSoft SafeQ editions is guaranteed:
- YSoft SafeQ PCAS 3.1.5.15 and newer
- YSoft SafeQ PCAS 3.5 Instant Edition (all releases)

1.3 TERMS AND ABBREVIATIONS

Terminal UltraLight
YSoft SafeQ® Terminal UltraLight

MFD
Multi-Functional Device

1.4 DISCLAIMER

The user that makes changes or modifications not expressly approved by the party responsible for compliance (Y Soft s.r.o.) could void the user's authority to operate the equipment.

2   OVERVIEW

2.1   SYSTEM OVERVIEW

The purpose of Terminal UltraLight is to provide user interface when interacting with printer and copier. The key function of the terminal is to handle user authentication and authorization to the device and the user interface for job queue management.

Picture 3 - System Overview

Only selected card readers are supported by Terminal UltraLight.

The YSoft SafeQ® Terminal UltraLight Print & Copy version is displayed on the Picture 4. The YSoft SafeQ® Terminal UltraLight Print Only edition is identical to the YSoft SafeQ® Terminal UltraLight Print & Copy edition, but it is not equipped with a copy button.

Picture 4 - Terminal UltraLight (Print & Copy version)

The Terminal UltraLight is equipped with a 2-ports network switch and so it is not necessary to provide another Ethernet socket for connection - the copier or printer can be connected via the terminal. It features a micro-computer, flash ROM, network interface and a card reader.

Terminal is powered by external power supply that is also included in installation package.

The emergency button is used for reset the terminal into default settings.

2.2   CAPACITIVE KEYBOARD

Capacitive touch keyboard utilized in the Terminal UltraLight is the latest technology providing better reliability and endurance than standard micro switch or membrane keyboards. The keyboard senses capacitance change on electrodes below the keyboard label. The bigger capacitance change the better the keyboard recognizes the touch. It is not important how strong user presses the button it is important to touch larger area. Each key press is signalized by a short beep (if beeps are enabled and use of given key is applicable at the moment).

For reasons above some requirements need to be met for proper operation:

- Use fingerpads instead of fingertips. Fingerpads cover larger area and are much better detected than fingertips.

- Using of force is irrelevant, it is absolutely enough to gently place the finger on the keyboard.

- The keyboard will not work when touched by non-conductive materials or materials with very small capacitance. Such materials include nails, plastic, styluses, pens, screwdrivers etc.

- The keyboard will not work when wearing gloves. Some exceptions to this may however apply to latex gloves used in medicine or food industry.

- ***The keyboard requires calibration for proper operation. The calibration is done each time the Terminal UltraLight is started. It is therefore absolutely necessary not to touch the keyboard during terminal startup otherwise the keyboard may not work properly***.

- It may happen that the keyboard will become less or much more sensitive to touches after a long period of operating time or when electrostatic or electromagnetic properties in the surrounding area change. When this problem occurs it is necessary to reboot or power off/power on the terminal so it would automatically calibrate the keyboard to new environment values.

2.3   TERMINAL ULTRALIGHT SPECIFICATION

Parameter	Value
Control	Capacitive keyboard
Identification	Using a card reader or PIN or any combination
Network	2-port 10/100 Mbit switch (auto MDI/MDIX)
Processor	Freescale Coldfire v2
Memory	64kB RAM, 512kB Flash
Terminal el. power supply input	12V DC
Maximum current input	1.0A
Working temperature	+5°C to +35°C
Storage temperature	0°C to +50°C
Working air humidity	20% to 85% without condensation
Storage air humidity	8% to 85% without condensation
Resistance to magnetic field	no added resistance

3   TERMINAL INSTALLATION AND CONFIGURATION

To install the Terminal UltraLight, please following four steps in the order mentioned:

- connect the ethernet cables (Chapter 3.1),

- use the mounting kit to fix the terminal on a suitable place - mostly on the side of MFD (Chapter 3.2),

- adjust the Terminal UltraLight settings (chapter 3.3)

- and activate an external copying control interface of copier/MFD device (only for Terminal UltraLight – Print & Copy edition).

3.1   CONNECTING CABLES

Terminal UltraLight requires TCP/IP connection to the YSoft SafeQ server. Terminal has own IP and MAC address.

Picture 5 - Interface of Terminal UltraLight – Print & Copy
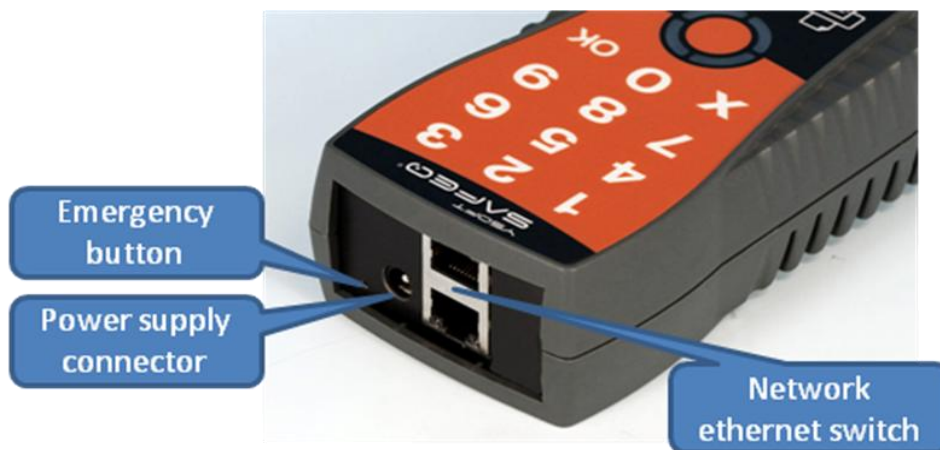
Picture 6 - Interface of Terminal UltraLight – Print Only

💣 **WARNING**

Use the original power supply received with the Terminal UltraLight only! Another power supply may damage the terminal. Such damage would not be covered by the warranty.

💣 **SAFETY NOTICE**

The Terminal UltraLight is not equipped with any power switch. Therefore the power socket MUST be on visible and available place during the time the Terminal is on.

3.2   TERMINAL MOUNTING

The exact use of installation kits (received with the terminal) depends on the specific set and model of your device/MFD.

Mounting kit may be fixed to the terminal by unscrewing one of the screws in the back, fixing the metal piece(s) and replacing the screw(s). In some cases, a dual-sided adhesive tape should be used to prevent the terminal from wobbling.
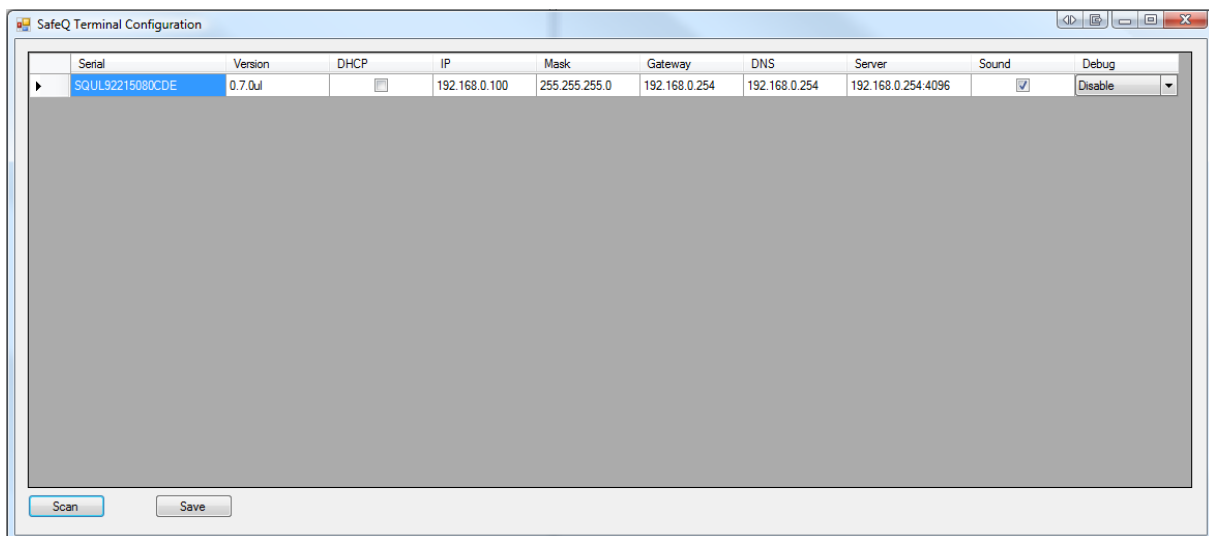
3.3   TERMINAL CONFIGURATION

There is special tool for configuration of Terminal UltraLight – SafeQ Terminal Configuration utils – see Picture 7.
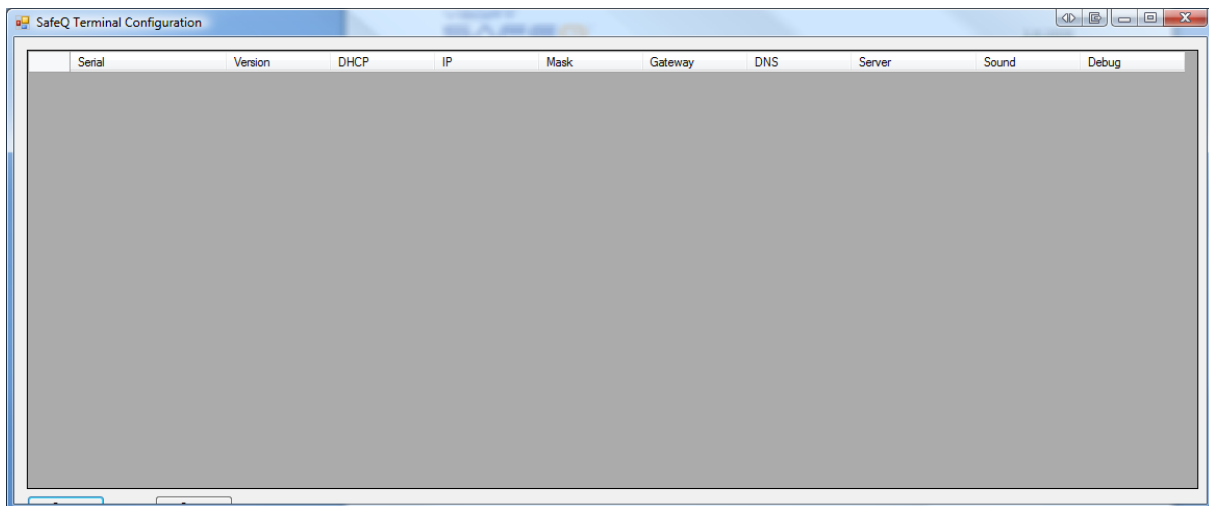
Picture 7 - SafeQ Terminal Configuration util

When you start this tool and press on **Scan** button, the tool discovers all the terminals in the same network (independently on the network settings), see Picture 8. You can change settings for the particular terminal in the list and using **Save** button the configuration is applied. Upon successful configuration change the terminal will be rebooted.

Picture 8 - Terminal UltraLight configuration

There is a default network configuration used for Terminal UltraLight:

- DHCP=0
- IP=192.168.0.100
- NETMASK=255.255.255.0
- GATEWAY=192.168.0.254
- DNS=192.168.0.254
- SERVERIP=192.168.0.254:4096

Emergency button is the way how to reset the terminal into default settings if anything goes wrong with the configuration. Also it is possible to do some other actions such as force firmware update.

The correct procedure of using the emergency button is the following:

- Unplug the terminal power cable
- Use a paper clip or a tiny screwdriver to push the emergency button. Hold the button pressed.
- Plug the terminal power back.
- The terminal now starts with short series of beeps with a longer pause between them. The action is selected by releasing the button in the pause. Once the beep count reaches selectable maximum it starts over again from 1. To cancel any selection unplug the power cable and release the button.
- 1 beep - do a set default configuration
- 2 beeps - do the firmware emergency update
- 3 beeps - do the normal firmware update
- 4 beeps - do the emergency reload - reset configuration to default and start emergency update
- 5 beeps - set network configuration to use DHCP server
- After the action is selected it is processed and the terminal is rebooted after that

It is possible to enter emergency button menu by holding the button for more than 5 seconds when Terminal UltraLight firmware has booted and the terminal is in default "Place card" state.

4 TERMINAL FIRMWARE

4.1 SERVICE FIRMWARE

Service firmware is the most important part of the terminal firmware. Right after power-up it will check the emergency button if any action is required. Then it will check the normal firmware for integrity. If the normal firmware is not valid then the emergency firmware will connect to server in emergency mode and download the firmware. If the normal firmware integrity is ok, then it is started.

4.2 TERMINAL FIRMWARE

Terminal firmware is the main part of the firmware. It initializes network, autodetects readers and sends the card number to the server when card is placed. By default the firmware starts UDP locator server which will help detecting available terminals on the local network. Also the TCP configuration server is started.

4.3 FIRMWARE UPDATE

The following line must be added to `conf/modules/safeQ.fwupdate.conf` file on the SafeQ server for the emergency update of Terminal UltraLight:

```
update-fw-ulemergency = update_file_with_ultralight_firmware
```

Example (it is similar to Terminal Professional):

```
update-fw-0.7.0ul = ultralight-0.8.fw
```

5   TERMINAL BEEP AND FLASH CODE SEQUENCES

The Terminal UltraLight contains status leds that serve for interaction with user. This chapter provides list of beep and flash code sequences as well as their meanings.

5.1   TERMINAL ULTRALIGHT BEEP CODE SEQUENCES

In the following text, the „-" denotes long beep and „." denotes short beep.

-   Card read error. Please try placing the card again or use the different card.

.-   Terminal validation failed. Server reports that the terminal is not registered on SafeQ. Please consult administrator manual.

--   No print job waiting in queue.

..-   User quota has exceeded.

-.-   User validation failed. User entered either invalid pin or user card is not registered in the system.

.--   Received error or warning message from server.

---   Connection to SafeQ server failed.

...-   Hardware configuration damaged, cannot continue in booting.

-..-   Maximum number of update attempts reached but no valid firmware detected.

.-.-   Update of firmware failed.

--.-   Software configuration cannot be saved. Probably faulty onboard eeprom.

..--   Software configuration damaged, loading defaults.

-.--   Maximum number of update attempts reached, resuming normal boot.

.---   Firmware damaged.

----   Network init failed.

....   Keyboard PCB failure.

-...   No reader connected and reader required for correct functionality.

.-..   Update of firmware failed. Error in server response, SafeQ server is probably not configured correctly.

--..   Update of firmware failed. Cannot connect to SafeQ server.

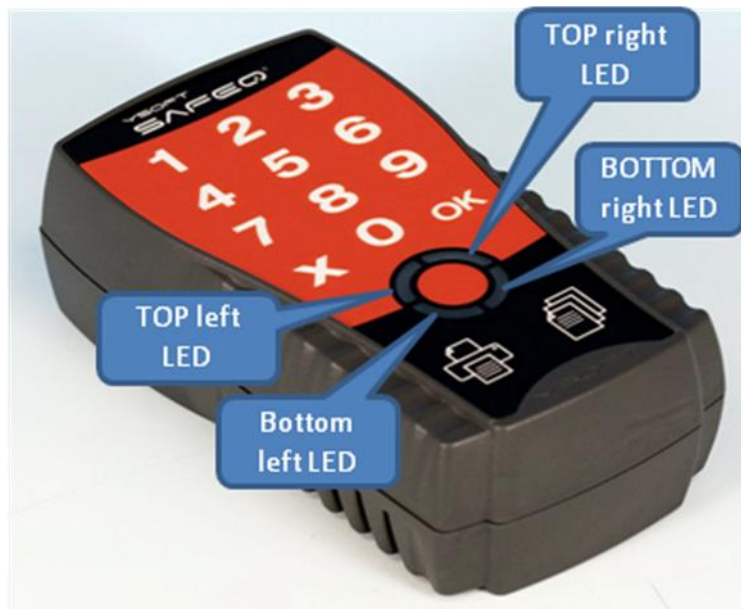**-...-**   Debug mode, not for public release!

5.2   TERMINAL ULTRALIGHT FLASH CODE SEQUENCES

This section provides flash code sequences used for interaction with a user.

There are following colors used for icons:

- Green - Led is green
- Red - Led is red
- Orange - Led is orange
- Grey - Led is off

The position of particular leds illustrates Picture 9.

Picture 9 - Status leds

	All leds are switched off. Terminal power is off.
	animated Terminal is processing, please wait.
	animated Firmware upgrade in progress, please wait (service firmware working).
	Firmware upgrade in progress, please wait (service firmware working) *Similar to the previous one.*

	Place card or enter pin.
	Enter pin when authentication "Card and PIN" used.
	Enter PUK when PUKs are enabled on server.
	Some print jobs available and copying possible. Select (P)rint or (C)opy. *Valid only for YSoft SafeQ® Terminal UltraLight Print & Copy.*
	flashing Copying in progress. Cancel by pressing (C), (X) or (OK) or by placing a card. *Valid only for YSoft SafeQ® Terminal UltraLight Print & Copy.*
	flashing Copying in progress. Server issued a warning, see MFP display for more details. *Valid only for YSoft SafeQ® Terminal UltraLight Print & Copy.*
	flashing Printing in progress, please wait until it is finished.
	flashing Printing in progress. Server issued a warning, see MFP display for more details.

	flashing Error occurred, see beep codes for details.
	changing Animation when user enters a pin on the keyboard.
	during boot Enter terminal model type
	during init sound Standard UltraLight model (1)
	during init sound UltraLight print only model (2)
	during init sound Ethernet reader model (3). Please note that ethernet reader operation can be configuration selected on UltraLight or UltraLight print only models. In such case the read software configuration command can read current settings.

Table No. 1 - Flash code sequences

6 RELATIONSHIP WITH OTHER DOCUMENTS

This section describes how this guide is related to other documentation:

Nr.	Document	Version	Author
1.	YSQ Terminal UltraLight – User's Guide [EN]	1.4	PNE
2.			
3.			
4.			
5.			
6.			
7.			

7 VERSION HISTORY

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Version	Date	Change	Status	Author
0.1	06/2009	Initial version	Final	PNE
1.0	06/2009	Chapter 4.3 added	Final	PNE
1.1	06/2009	Added icons for flash sequences / Chapter 2.2 added (capacitive keyboard)	Final	PNE
1.2	06/2009	Added keyboard overviews for Print & Copy and Print Only editions	Final	PNE
1.3	07/2009	Update of interface for Terminal UltraLight – Print Only; Safety Notice added	Final	PNE
1.4	08/2009	Technical specification (chapter 2.3) extension – temperature and humidity parameters added	Final	PNE
1.5	09/2009	Chapter 1.4 (disclaimer added)	Final	PNE