

Technical information

SmartPager

based on SmartLink V.3, incl. terminal devices

Intended use – Notification of alarm messages (Intelligent Alarm Forwarding).

Bedside monitoring and other medical devices for managing data and alarms, as part of a Distributed Alarm System with Operator Confirmation (CDAS). Generate warning and alarm messages based on user-defined rules applied to the received data (physiological and technical values and alarms). As part of a DAS/CDAS system, SmartLink can take on the functions "Integrator" and "Communicator", thus correspondingly the task of an "Intelligent Alarms Forwarding System". SmartLink is a class 2b medical device.

Highlights

- Class 2b medical device
- Distributed Alarm system for generating managing and receiving alarm signals remotely and/or mobile in addition to local monitoring alarms
- Alerting of caregivers, doctors and technicians via mobile and stationary devices with confirmation
 - SmartPager (Android app)
 - MAS Main Alarm Station (Windows PC)
 - LED corridor display
 - PC Agent
- Connection to Net9 via Unified Gateway plug-in "CGS-9001" for all network-enabled Nihon Kohden devices
- Flexible connection of Nihon Kohden Monitoring - even without Central Nursing Station - and integration of other medical bedside devices
- Status information (physiological and technical alarms)
- Call for help for nursing staff ("code blue")
- Silent room: suppression of local alarms when "nurse in room"
- Intelligent alarm processing, according to priority-, group- and shift assignment
- Browser-based graphical user interface for bed allocation , shift assignment and escalation scenarios
- User interface for beds assignment on the pager
- Forwarding to non-medical devices and telephone systems (ESPA 4.4.4 and ESPA-X)
- Based on a lean software solution
- 9 languages, freely editable alarm texts
- Expanded logging, output in Excel format, export group and time -specific via email
- PC agent, email or SMS as last warning
- Low TCO

Strategies for reducing unnecessary alerting

Reduce alarm fatigue through targeted alarm management, increase nurse efficiency by reducing clinically unnecessary activity, without compromising patient safety:

- Transmission only of the alarm with the highest alarm priority of this bed
- Configurable alarm groups , alarm priority and alarm classes (physiological / technical) specific selection: only relevant alarms send to relevant persons / required group of people (nurses, doctors, service technicians)
- Detailed call strategy selection (no alerting, delayed alerting, sequential dealing, parallel dialling)
- Repeat and escalation strategy if the alarm goes on longer than the selected time limit (other group, if necessary priority increase)



Alarm Management means:

To distribute – Each bed can be assigned to a caregiver or a terminal. Other persons or communication terminals are called only in the case of unavailability or after escalation

Take over – Alarms with direct acknowledgment ("take charge") to avoid unnecessary disturbances of caregivers, the acceptance of an alarm stops it immediately on other terminals

Re-send – Even after "take charge", this alarm can be reactivated again as a call for help

Silencing – Each medical device can be assigned a dedicated "room", is a nurse present in this room these devices do not sent alarms

Customize – Changing the bed assignment, eg for night or weekend work shifts, can be done manually or automatically time-controlled

Rate – The alarm priority of each alarm type can be set individually on the Distributed Alarm System, regardless of the settings on the monitoring

Call – Manual "call for help" button

Filter – The operation and display on each device is basically only for assigned beds, but at the touch of button information from all beds are available spontaneously

Save – Irregular events (not assigned alarms, no device online, etc.) are sent to selected emergency terminals, also for technical system alarms and last-warnings are various - wired and wireless media to choose from (Android-phones, PC-agent, Display) , even notification by SMS or email is possible

Software platform

SmartLink is based on a pure software solution, for operating only a Windows OS platform is needed (physical server or VM)

- Processor: 2 processors
- RAM (64-bit OS): 8 GB
- Memory: 80 GB
- Graphics card: <undefined>
- Virtualization OS: VMware virtualization system ESXi5.5.0 (or later)
- OS: Windows 7 Professional, Windows 10, Windows Server 2012, Windows Server 2016, Automatic Windows Updates disabled
- Web server: IIS 6 or later
- Internet browser: Internet Explorer 9 or later

Features in detail

Monitoring

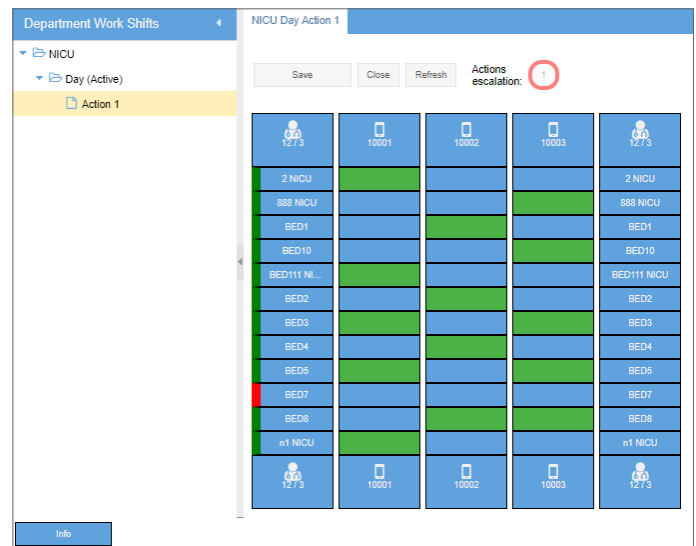
- Monitor up to 8 independent care units on one SmartLink server
- Unlimited number of beds per care unit
- Unlimited number of medical devices per care unit
- Support for monitoring, ventilation, incubators, pumps and other bedside devices
- Connection via TCP / IP or serial

Administration

- Browser based setup
- Individual or group access rights by login with password
- System configuration (standard and expert Mode)
- Graphical bed assignment to nurses (also possible on SmartPager)
- Graphical work shift assignment / escalation scenarios

System status and logging

- Logging of all events and activities including date and time
- Access via graphical web interface (password protected)
- Timed reports (daily, weekly) in Excel format, specifically to various groups by email (clinic, biomed, IT, alarm details, pager assignment, configuration)
- Last warning on pagers (of other departments) and central PC-agent, as well possible by email or SMS



Messaging

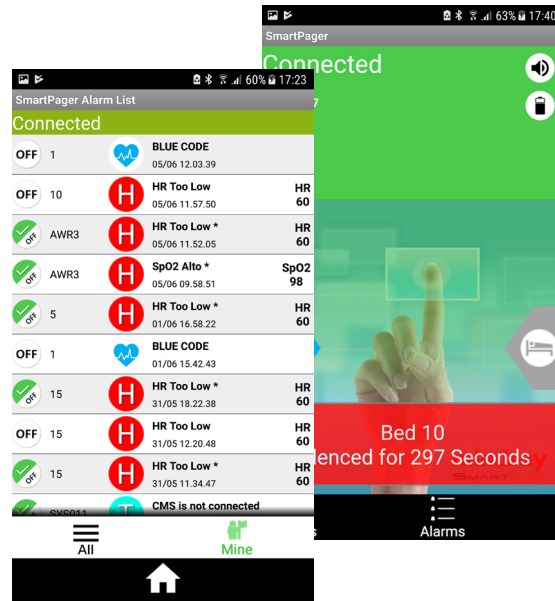
- Four alarm groups with six escalation rules each
- Unlimited number of pagers
- Unlimited amount of MAS
- Automatic muting on "take in charge"
- Help function: as follow up after "take charge"
- "Code blue"-function (on SmartPager)
- "Silence room"- function for muting defined alarms (on SmartPager)
- Patient and bed information from Monitor
- Info texts / messages freely editable
- 9 languages available, GUI language individually adjustable for each SmartPager



Supported devices

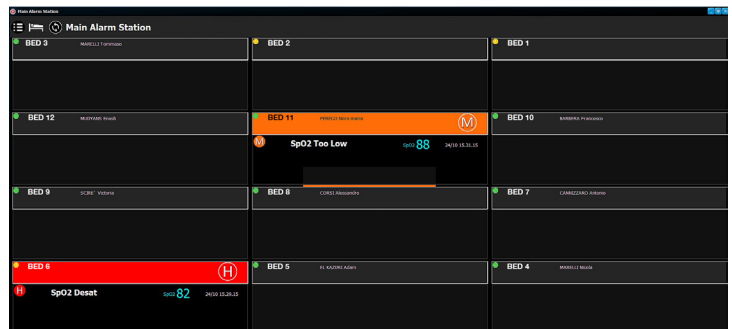
SmartPager (Android Smartphones)

- Android smartphones with SmartPager APK v.3, recommended: Samsung Galaxy Xcover 3 (Android 5 and 6), Samsung Galaxy Xcover 4 (Android 7) , other devices on request
- Protection class IP68
- WiFi communication to SmartLink server (GSM optional)
- Connection check with local message on interruption
- Receipt of alarm messages with direct “take charge” option
- Alarm history for assigned and all beds
- Call for help and emergency button (code blue)
- User login (with password) possible
- Display of real-time vital sign waveforms with ViTrac (optional)



Main Alarm Station (MAS)

- Windows PC with overview screen
- Up to 12 beds / display
- Takeover of alarms, Interactions with smart pager
- Display of alarms and vital data from monitoring and other bedside devices
- Alarm History
- Integration of video surveillance (optional)
- Muting (also time controlled) and blanking of patient names (corridor operation) possible
- Minimum requirements for the Windows-PC: RAM: 4GB , Processor: Intel Core i5, Total free disk space: 50 GB, OS: Windows 7/10, Network card 1000 Mbps



ESPA

A connection to an existing telephone PBX is possible via an ESPA interface, thus present text-enabled telephones / DECT devices can be connected and info texts are received. Depending on the protocol used, it may be possible to classify it as DAS, but if using a serial connection, it can only be classified as DIS.

Interfaces to the following ESPA systems (ESPA-X or ESPA 4.4.4) are already available:

- Ascom
- Mobicall
- Alcatel
- Unify
- OScaR (DAKS)

Note:

To connect the SmartLink server to an ESPA 4.4.4 system, a protocol converter (serial to Ethernet) is required. For new ESPA systems (not shown in the table) can require a modification of the driver to support the specific ESPA system communication functions.



Improving Healthcare with Advanced Technology

Since its foundation back in 1951, Nihon Kohden's mission has been to improve the quality of life with advanced technology. We provide solutions for diagnosis, critical care, clinical information, and in vitro diagnostics – and we are dedicated to collaborate with you to meet the challenges of healthcare today and tomorrow.

Visit www.nihonkohden.com to find out more.

NIHON KOHDEN EUROPE GmbH
Raiffeisenstr. 10, 61191 Rosbach, Germany
Phone: +49 6003 827 0, Fax: +49 6003 827 599
Internet: www.nihonkohden.com, E-mail: info@nke.de

NIHON KOHDEN CORPORATION
1-31-4 Nishiochiai, Shinjuku-ku, Tokyo 161-8560, Japan
Phone: +81 (3) 59 96-80 36, Fax: +81 (3) 59 96-81 00
Internet: www.nihonkohden.com



This brochure may be revised or replaced by
Nihon Kohden at any time without notice.

E/BR-SMART2-EN01