



## Manual iCall 220 SIP-Touch (NWATES0100)



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## Intended use

Use this product only for the purpose it was designed for; refer to the data sheet and user documentation for details. For the latest product information, contact IndigoCare Europe or IndigoCare USA.

This installation guide is a working and supporting tool for certified engineers for installing and maintaining iCall installations.

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## 1. Introduction

The iCall 220 SIP-Touch is one of the foundation blocks of the iCall call system and features a 7" full-colour resistive touch screen for easy use by rest home or hospital personnel. This unit is equipped with an iCall LB connection, ethernet, microphone, speakers, outputs and more. This makes the device ideal for VOIP communication and a useful overview of active calls, weather and care system, in addition, of course, to the standard functioning call system.

The installation and configuration is easy, through for example, the various power connectivity options such as POE, power injection or direct connection to external power. Furthermore the device supports up to 50 iCall LB products (max 5 where power supply takes place through PoE) per every appliance which can be set up via the web interface as well as the touch screen. The extra outputs also ensure flexibility and can, if desired, when connecting the appliance be set up via the screen.

The combination of these factors means that this device is one of the most versatile and flexible products within the iCall range.

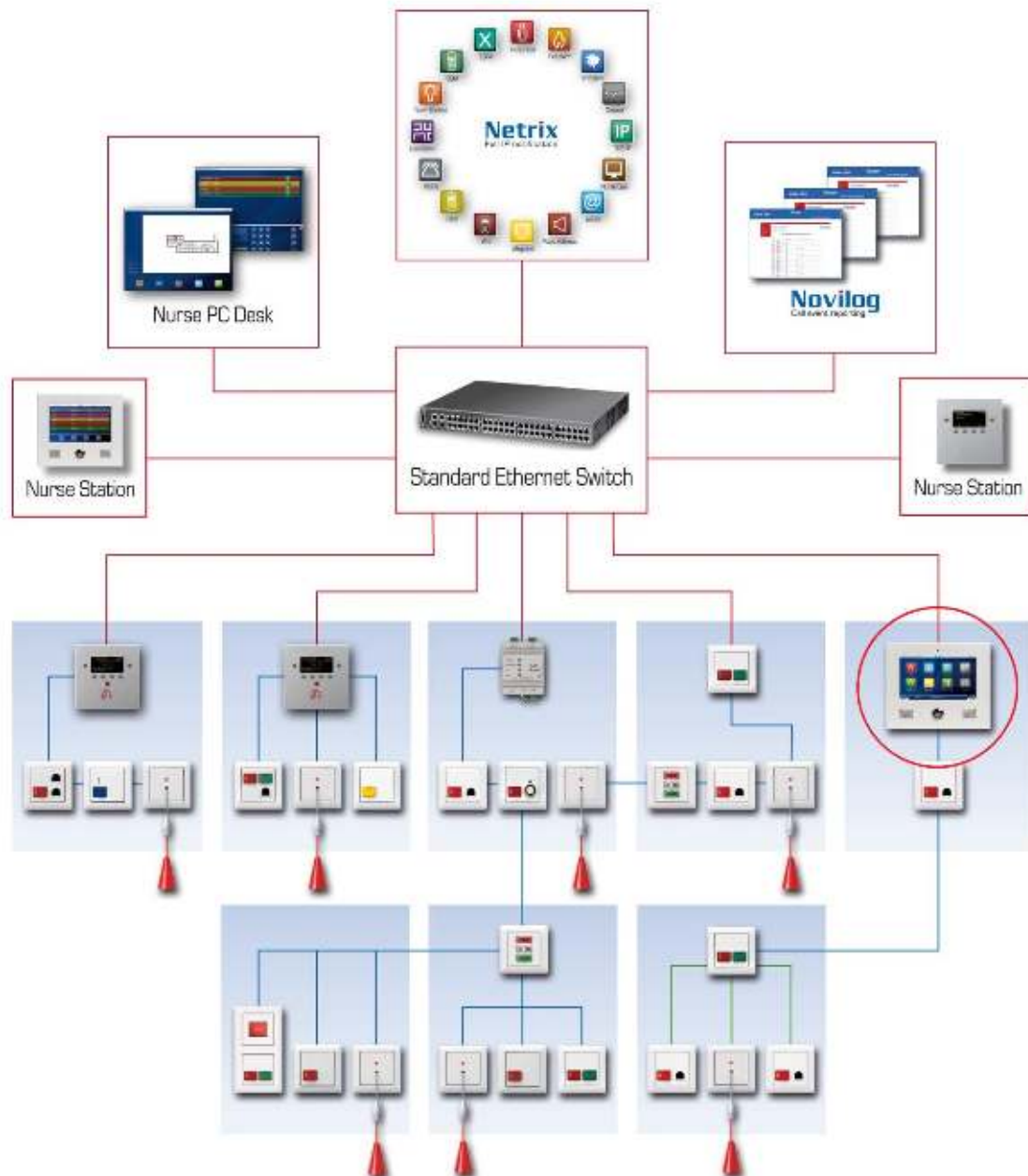


Figure 1: iCall Touch 220



## 2. Installation

## 2.1. Topology



### Figure 2: Topology

## 2.2.iCall system

An iCall calling system is made up of four different levels:

- LAN
- LocalBus (Master)
- LocalBus (Slave)
- Switching material

A large portion of the products only have a LAN interface or a LocalBus (Slave) interface. But some products support both LAN and LocalBus (Master). Other combinations are not possible. **Fout! Verwijzingsbron niet gevonden.** shows an example of such a set up. Included here are the iLink and Netrix products that belong on the LAN level and the IP-OI is a LocalBus (Master) device. All other products shown are LocalBus (Slave) buttons or switch material. A maximum of 1 master device per LocalBus network is permitted. The number of LB slaves is limited to 50 buttons per LB network. One can of course provide an unlimited number of LB networks per installation, with the restriction that there should be as many LB masters as LB networks. The maximum number of switch buttons depends on the available inputs to LB (Slave of Master) devices.

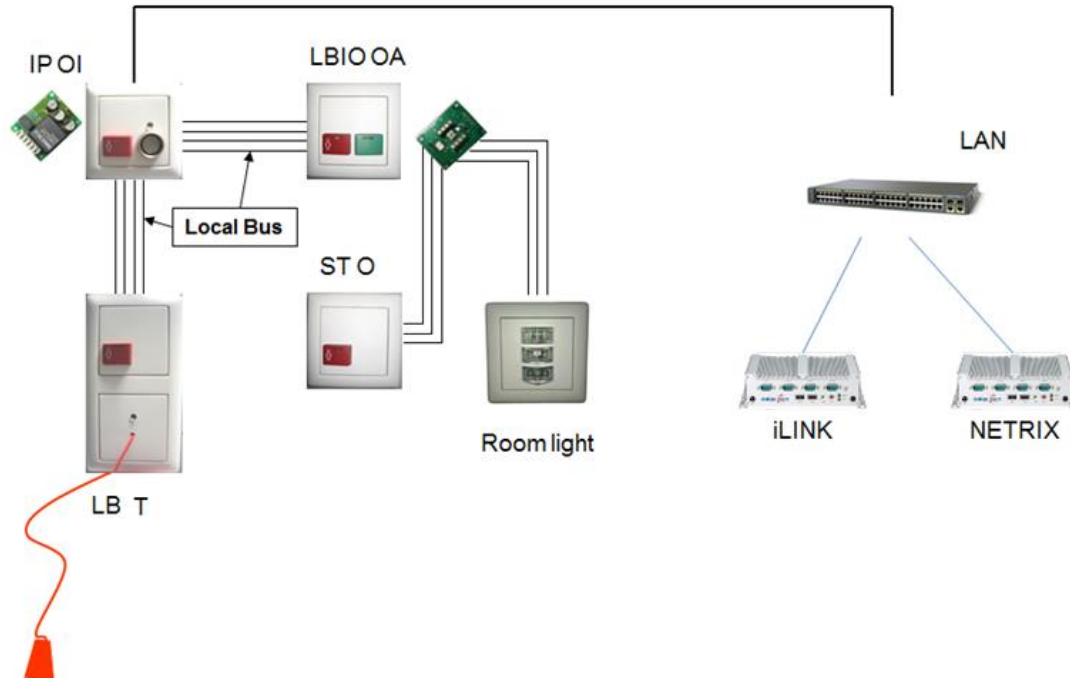


Figure 3: Example of a LocalBus and LAN coupling

### 2.2.1. LAN

The LAN level includes all devices that communicate with each other via a switch across an ethernet connection.

Included are:

- iCall 290 MS-PC (NWAAES1100)
- iCall 290 IP-OD (NWAAES1050)
- iCall 290 SIP-Touch (NWATES0150)
- Novilog (SWHAXX1000)
- Netrix (SWEXCO2500)
- iCall 100 IP-B (NWAAES0150)
- iCall 100 IP-DIN (NWAAES0160)
- iCall 105 IP-OAE (NWAAES0105)
- iCall 110 IP-OA (NWAAES0100)
- iCall 120 IP-Oi (NWAAES0200)
- iCall 130 IP-OE (NWAAES0300)
- iCall 140 IP-O (NWAAES0400)
- iCall 160 IP-U (NWAAES0600)
- iCall 170 IP-D (NWAAES0700)
- iCall 220 IP-OiD (NWAAES1000)
- ***iCall 220 SIP-Touch*** (***NWATES0100***)
- iCall floor level indicator (NWEXCO0200)
- iCall IP Corridor Display (TBC)

### 2.2.2. LocalBus (Master)

The following products are included in the LocalBus (Master) level:

- iCall 100 IP-B (NWAAES0150)
- iCall 100 IP-DIN (NWAAES0160)
- iCall 105 IP-OAE (NWAAES0105)
- iCall 110 IP-OA (NWAAES0100)
- iCall 120 IP-Oi (NWAAES0200)
- iCall 130 IP-OE (NWAAES0300)
- iCall 140 IP-O (NWAAES0400)
- iCall 160 IP-U (NWAAES0600)
- iCall 170 IP-D (NWAAES0700)
- iCall 220 IP-OiD (NWAAES1000)
- ***iCall 220 SIP-Touch*** (***NWATES0100***)
- iCall 290 SIP-Touch (NWATES0150)

### 2.2.3. LocalBus (Slave)

The following products are part of the LocalBus (Slave) level:

- iCall 305 LB-OAE (NWBAES2150)
- iCall 305 LB-OAE /R (NWBAES2151)
- iCall 310 LB-OA (NWBAES2100)
- iCall 315 LB-A (NWBAES2050)
- iCall 316 LB-AEE (NWBAES2160)
- iCall 320 LB-Oi (NWBAES2200)
- iCall 321 LB-i (NWBAES2225)
- iCall 325 LB-E (NWBAES2250)
- iCall 330 LB-OE (NWBAES2300)
- iCall 331 LB-OE /R (NWBAES2301)
- iCall 335 LB-OEE (NWBAES2350)
- iCall 335 LB-OEE /R (NWBAES2351)
- iCall 340 LB-O (NWBAES2400)
- iCall 350 LB-T (NWBAES2500)
- iCall 360 LB-U (NWBAES2600)
- iCall 362 LB-S (NWBAES2620)
- iCall 365 LB-SU (NWBAES2650)
- iCall 370 LB-D (NWBAES2700)
- iCall 390 LB-Display (NWBAES2800)
- iCall 500 LBIO-B (NWBAES3000)
- iCall 505 LBIO-OAE (NWBAES3150)
- iCall 510 LBIO-OA (NWBAES3100)
- iCall 520 LBIO-Oi (NWBAES3200)
- iCall 521 LBIO-i (NWBAES3225)
- iCall 530 LBIO-OE (NWBAES3300)
- iCall 535 LBIO-OEE (NWBAES3350)
- iCall 540 LBIO-O (NWBAES3400)
- iCall 560 LBIO-U (NWBAES3600)
- iCall 565 LBIO-SU (NWBAES3650)
- iCall 570 LBIO-D (NWBAES3700)
- iCall 585 LBKL-IO (GWR) (NWBAES3851)
- iCall 585 LBKL-IO (GYR) (NWBAES3850)
- iCall LB-Receiver (BOSCH) (NWBEAS4900)
- iCall IO-Station (EMEA) (NWBAES3900)
- iCall Relay-Station (EMEA) (TBC)

#### 2.2.4. Switch material

The following products are included in the switching material:

- iCall 410 ST-OA (NWBAES4100)
- iCall 415 ST-A (NWBAES4150)
- iCall 430 ST-OE (NWBAES4300)
- iCall 430 ST-OE with NO entry contact (NWBAES4302)
- iCall 431 ST-OE /R (NWBAES4301)
- iCall 440 ST-O (NWBAES4400)
- iCall 450 ST-T (NWBAES4500)
- iCall 455 ST-PN (NWBAES4550)
- iCall 460 ST-U (NWBAES4600)
- iCall 470 ST-D (NWBAES4700)
- iCall 480 ST-KL (GYR) (NWBAES4800)
- iCall 486 ST-KL Nameplate white (NWCASI0100)
- iCall 487 ST-KL Nameplate silver grey (NWCASI0200)
- iCall 488 ST-KL Nameplate dark grey (NWCASI0300)

## 2.3. Components

The device consists of three modular components: a Computer-On-Module (COM) with the processor, a  $\mu$ SD card and the motherboard. The advantage of this modular design is that components are easily interchangeable and replaceable.

### 2.3.1. Computer-On-Module

The COM board contains the i.MX25 processor, RAM memory and the various electronic components required for the functioning as a computer system. The boot loader, the OS (Linux) and the various drivers are installed on the internal flash memory of this module.

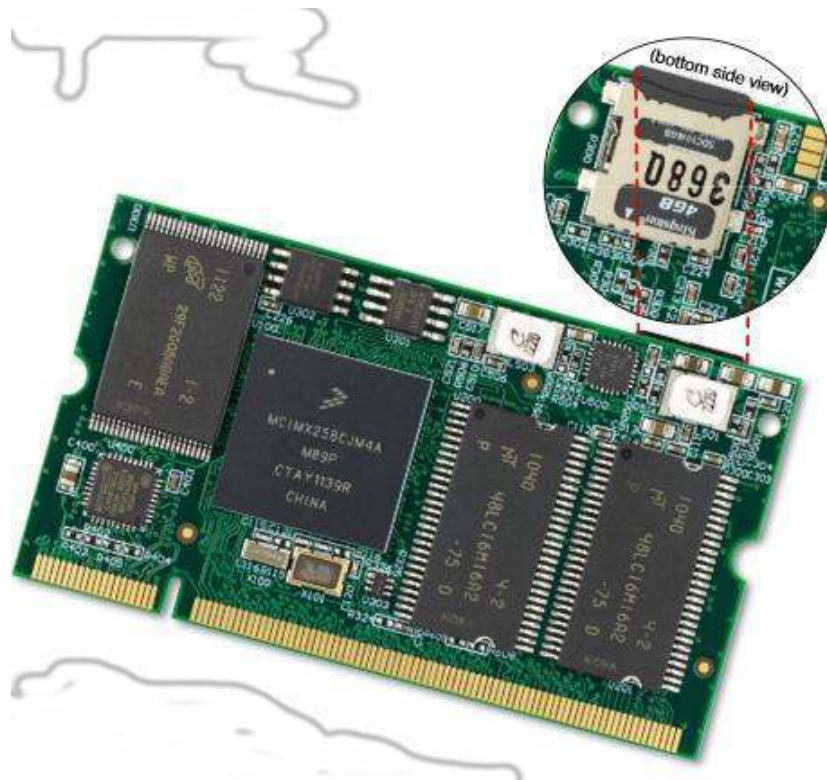


Figure 4: Computer-On-Module

#### Please note!

These electronics are very sensitive to electrostatic charges. Make sure you are ESD safe when touching this board.

### 2.3.2. μSD

The μSD card contains the iCall application and the device's settings. In addition the necessary files for the proper functioning of the Linux OS are located here. The file format is EXT3 making these cards unreadable in a Windows environment; a Linux operating system is required.

These cards are perfectly interchangeable with each other, meaning a defective μSD card can be quickly replaced. We are currently using versions of 2GB and 4GB.



Figure 5: μSD card

### 2.3.3. Motherboard, screen and housing

The motherboard is built into the housing with full-colour resistive touch screen and takes care of all connections between the processor and the outside world. It includes an iButton reader, a microphone, speakers, various input and output capabilities, an ethernet port and a DIMM socket for connecting the COM module.





Figure 6: Motherboard in the housing

To remove the COM board from the motherboard the latches on the side need to be moved aside and the board removed from the connector at an angle. To place the daughter card back in the motherboard it must be slid into the connector at an angle of approximately 45° and pushed down.



Figure 7: Locking COM module in to DIMM connector



## 2.4. Connections

### 1. Outputs

- a. 24V
- b. Output 5
- c. Output 4
- d. Output 3
- e. Output 2
- f. Output 1
- g. C
- h. NO

### 2. iCall Bus

- a. 24V
- b. GND
- c. TX
- d. RX

### 3. Inputs

- a. 24V
- b. Input 1
- c. Input 2
- d. Input 3
- e. Input 4
- f. Input 5
- g. Input 6

**Note: not usable at the moment**

### 4. DIMM connector

### 5. Ethernet port

### Version V0.1

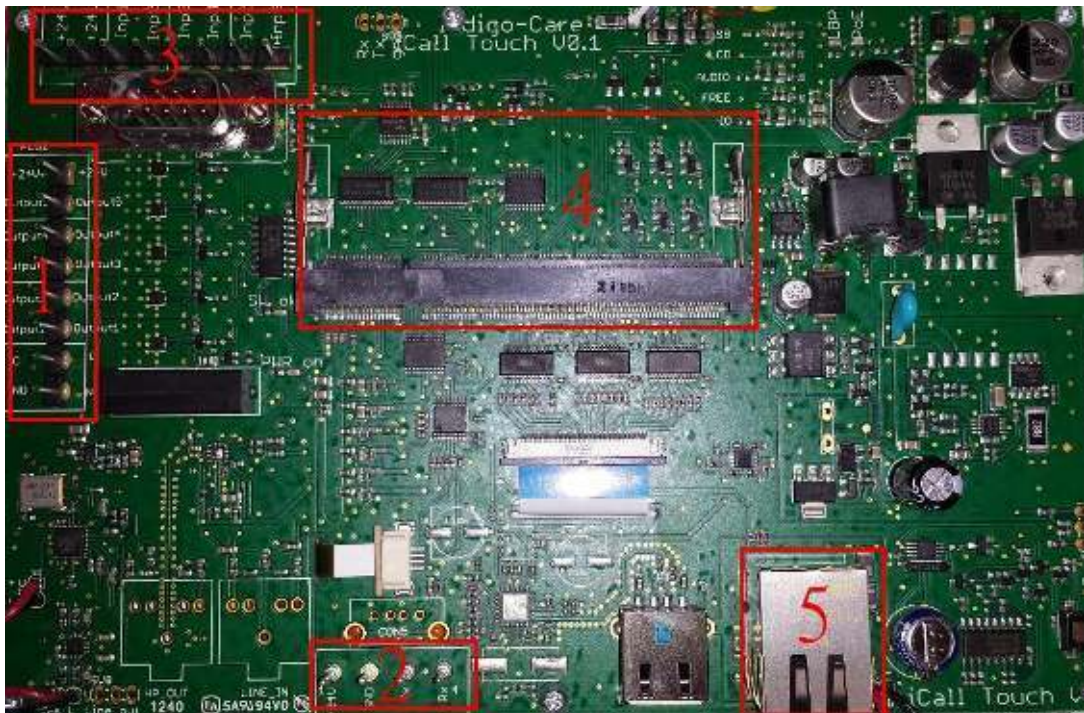


Figure 8: Motherboard version 0.1

### Version V0.2



Figure 9: Motherboard version 0.2



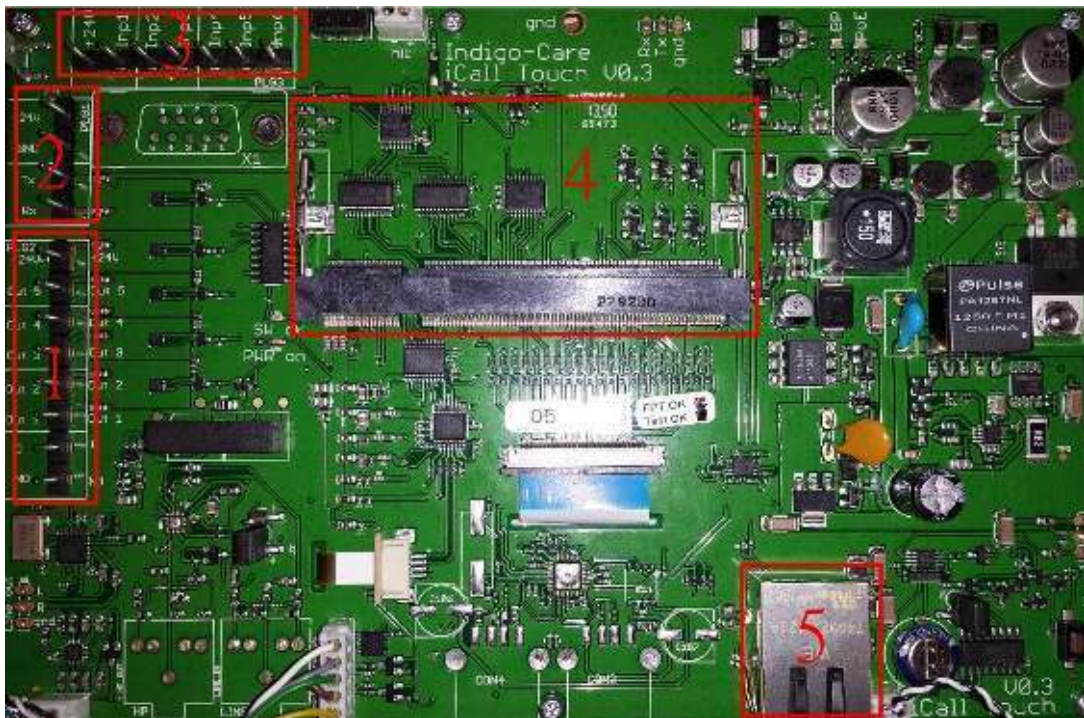


Figure 10: Motherboard version 0.3

## 2.5. Power Supply

There are 3 options when supplying the Touch 220 SIP-Touch with power:

- POE (Power-Over-Ethernet)
- Power injection
- Standard 24V

### 3. Configuration

There are two different ways of configuring the unit:

- Via the touch interface on the screen
- Via the web interface

#### 3.1. Touch interface

Using the touch interface you can configure various settings such as network, iLink or Netrix settings. See chapter 4 GUI for more info about accessing this menu.



Figure 11: General settings via Touch interface

As shown in Figure 11, the following parameters can be set up in the general settings page:

- |                    |                       |
|--------------------|-----------------------|
| • Client Name:     | Name of the client    |
| • Device Name:     | Name of the device    |
| • Username:        | Login for web page    |
| • Password:        | Password for web page |
| • Re-type Password | Password for web page |

There is also a **reboot** button for restarting the system. This allows the system to restart without losing any settings.



Figure 12: Network settings via Touch interface

As shown in Figure 12, the following parameters can be set up in the network settings page:

- IP: IP address in the network
- Netmask: Network subnet
- Gateway: Network gateway



Figure 13: Netrix settings via Touch interface

As shown in Figure 13, the following parameters can be set up in the Netrix settings page:

- Master IP: The netrix IP address
- Backup IP: The backup netrix IP address
- Port: Port for netrix communication
- Cyclic Group: Cyclic ALIVE group in netrix
- Cyclic Time: Interval for ALIVE messages
- Enable Netrix: Communication to Netrix on/of
- Enable Cyclic Sending: Cyclic sending on/off



Figure 14: iLink settings via Touch interface

As shown in Figure 14, the following parameters can be set up in the iLink settings page:

- IP: iLink IP address
- Port: iLink port IP address
- Enable iLink: Communication to iLink on/off





Figure 15: Broadcast settings via Touch interface

As shown in Figure 15, the following parameters can be set up in the Broadcast settings page:

- IP: IP address of broadcast receivers
- Port: Port for sending UDP broadcast messages
- Enable Broadcast: Communication via broadcast on/off



Figure 16: NTP settings via Touch interface

As shown in Figure 16, the following parameters can be set up in the NTP settings page:

- IP: NTP server IP address
- Enable Ntp: On/off of time adjustment via NTP



Figure 17: Call settings via Touch interface

As shown in Figure 17, the following parameters can be set up in the Call settings page:

- Call Rep. Time: Interval time for repetition of open calls to the netrix
- Assist Rep. Time: Interval time for repetition of open assistance calls to the Netrix
- Urgence Rep. Time: Interval time for repetition of open urgent calls to the Netrix
- Errors: Error group to the Netrix
- Call Following: Call following on/off
- Toilet Call: Toilet call on/off
- Send Present to Netrix: Forward presences to the Netrix
- Send Away to Netrix: Forward absences to the Netrix





Figure 18: Other settings via Touch interface

As shown in Figure 18, the following parameters can be set up in the Other settings page:

- Address registration: Address registration on/off
- Language: Select language

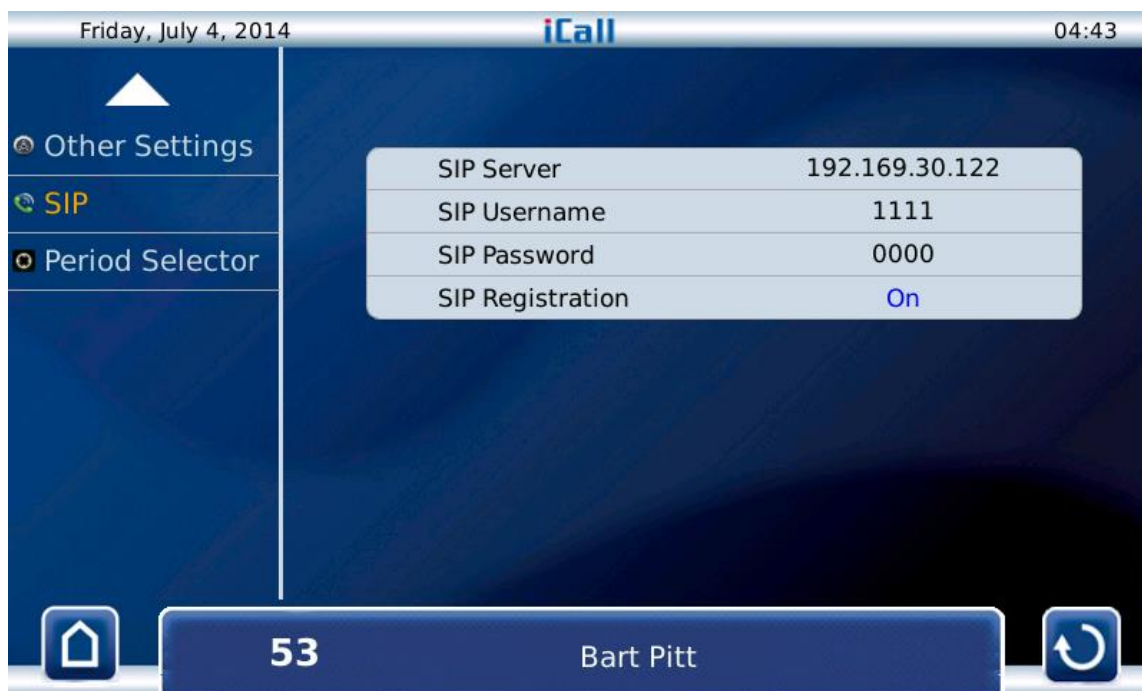


Figure 19: SIP settings via Touch interface

As shown in Figure 19, the following parameters can be set up in the SIP settings page:

- SIP Server: PBX IP address
- SIP Username: SIP device username
- SIP Password: SIP device password
- SIP Registration: SIP registration on/off



Figure 20: Period Selector settings via Touch interface

As shown in Figure 20, the following parameters can be set up in the Period Selector settings page:

- Location: Location this advice listens to for period changeovers
- Enable Period Selector: Period Selector function on/off

### 3.2. Web interface

If navigation to the device's IP address takes place through an internet browser, you will end up in the web interface of the iCall 220 SIP-Touch. You can fully set up the unit here in accordance with your preferences.

The menu on the left lists all the components, see Figure 21. Click on a link to navigate to the specific component.

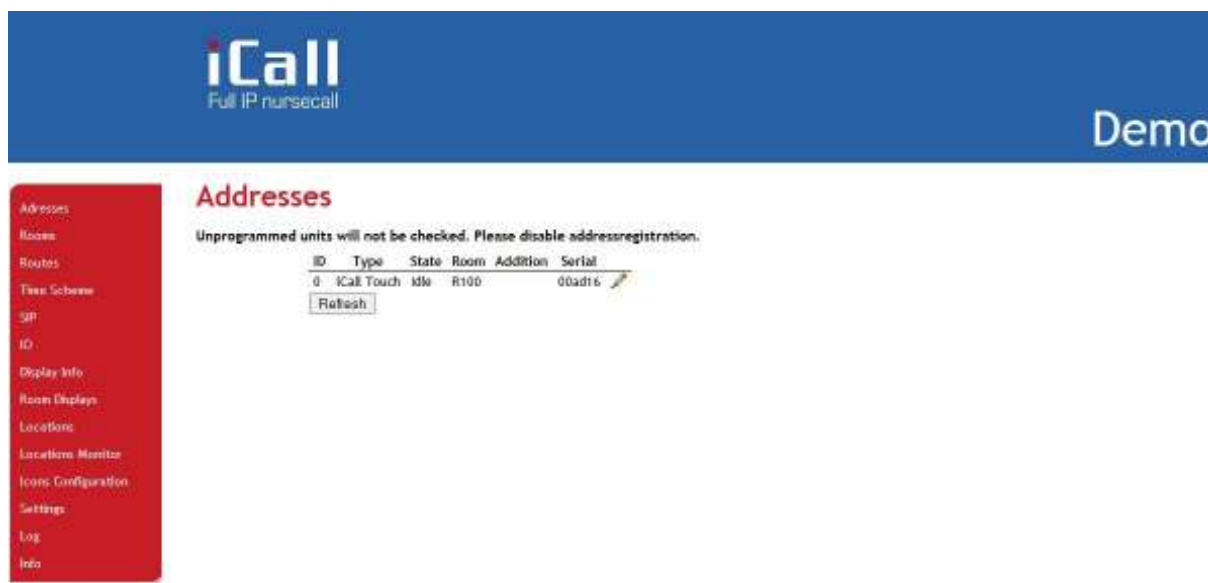


Figure 21: Menu overview in the web page interface

### 3.2.1. Addresses

All LB buttons that are registered on the iCall 220 SIP-Touch can be located on the addresses page. To find out the registration process for a particular LB button it's advisable to consult the manual of the specific product in question.



Figure 22: Overview of all registered addresses

In this overview the following information:

ID	0 - 50
Type	Type of (Slave) button
State	Status of (Slave) button
Room	Room number of (Slave) button
Addition	Addition
Serial	Serial number

Table 1: Address parameters

**ID:** This is the number of the (Slave) button. This number can be a value between 0 and 50 given one can register a maximum of 50 buttons. ID 0 is always reserved for the Master, in this case the iCall 220 SIP-Touch. LocalBus buttons (Slave) can therefore have an address of 1 up to and including 50.

**Type:** On registration the type is automatically determined based on the serial number, but can if required be amended. This is, for example the case if one wants to have an LB-OA, which is usually defined as 'ROOM' type, to function as 'TOILET' type.

The following types can be selected:

- *Bed*
- *Toilet*
- *Room*
- *Room + ID*
- *Urgence*
- *IO*
- *Light*
- *Urgence-Assistance*
- *Bosch Receiver*
- *Mini display*
- *IO (V2)*
- *Cancel Toilet*

**State:** This is the actual status of the specific button.


The button can be in the following status:

- *Idle*
- *Present*
- *Call*
- *Urgence*
- *Assistance*
- *Search*
- *Error*
- *Unknown*

**Room:** This is the room number to which this address belongs. In this way various LocalBus buttons that are physically installed in the same room can be linked to a specific room. There can be up to 10 addresses linked to one room number.

**Addition:** This is an addition that can be placed by an address. This info is then sent along via broadcast messages or to the Netrix when a call is made from this address. If an addition is provided it makes it possible to distinguish from which button within a specific room a call is being made.

**Serial:** This is the serial number associated with the specific button.

Settings can be amended per address by clicking on *Edit* (). You will then be taken to a page where you can modify the settings, see Figure 23. Press the *Save* button to save any changes.

Edit address 0

### Figure 23: Modification of an address

### 3.2.2. Rooms

All rooms programmed on this device can be found on the room's page. The list of visible rooms is automatically generated based on the room numbers assigned in the address page. All addresses associated with one room number are grouped in this way. As of firmware version 1.9.0 it will be possible to manually add rooms if you only wish to use Bosch wireless buttons.

The following information is available in this overview:

Room	Room number
State	Status of the room
Resident name	Room occupant (Max 2)
Location	Location
Routes	Routing
Addresses	Linked addresses
Bosch ID	Linked Bosch IDs

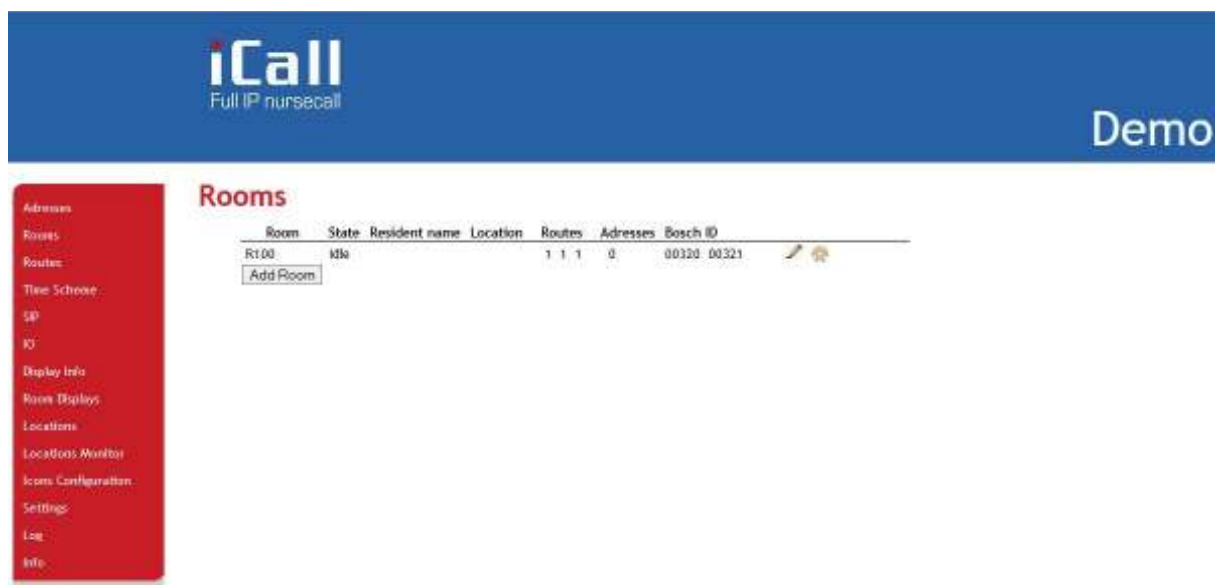


Figure 24: Overview of all registered rooms

**Room:** This is the room number.

**State:** This is the actual status of the specific room.

The room can be in the following status:

- *Idle*
- *Call*
- *Present*
- *Error*
- *Urgence*
- *Assistance*
- *Assistance - Toilet*
- *Unknown*

**Resident name:** If desired the name/names of the room occupants can be provided here. Up to two names can be entered. This info will be sent via broadcast when a room call is made.

**Location:** A room location can be provided here. Calls are always filtered by location, so, if for example there is a room 100 on the first and second floor, one would, for example, enter location **1<sup>st</sup> FL** and **2<sup>nd</sup> FL** for the rooms on the first and second floor respectively. A call from room 100 from the 1st floor will not affect the status of the room 100 on the second floor.

**Routes:** These are the routes followed for every period for this room. For more info on routes and periods see 3.2.3.

**Addresses:** These are the linked addresses that are associated with this room number.

**Bosch ID:** Up to 4 Bosch IDs can be added per room number.

To manually add a room click on the *Add room* button. These are virtual rooms which differ slightly from standard rooms, but are only used with wireless Bosch buttons. These rooms can also be manually deleted by clicking on *Delete* (✖).

Settings can be modified per room by clicking on *Edit* (✎). This takes you into the page where you can modify the settings, see Figure 25. Press the *Save* button to save any changes.

Finally, there is also the function *Learn On* (🔊) and *Learn Off* (🔇) for learn Bosch IDs.



Addresses

Rooms

Routes

Time Schemes

GP

ID

Display Info

Room Displays

Locations

Locations Monitor

Icons Configuration

Settings

Log

Info

### Edit room R100

Resident 1:

Resident 2:

Room number:

Location:

ID 1:

ID 2:

ID 3:

ID 4:

Periods

1: Morning

2: Evening

3: test

Routes

1: Route 1

1: Route 1

1: Route 1

Figure 25: Modification of a room

### 3.2.3. Routes

The page entitled routes depicts an overview of all routes which can be followed. A specific route must be designated and followed. Note it is possible to link every room to the same route. In this way, you can, when a call from room 100 comes in, call 1000 in the Netrix group and if a call from room 101 comes in; call room 1001 in the Netrix group. Depending on the configured logic of these groups in the Netrix, various actions will be performed. See the Netrix manual for more info on Netrix groups and the use of them.

In a route various settings are established such as groups that are called in the Netrix for varying types of calls. Other settings such as mini display settings and IO settings can also be established here as of firmware version RD\_1.9.0.


In this overview the following information:

ID	0-20
Route name	Name of the route
Profile : repetitions	GR1 : REP1 GR2 : REP2 GR3 : REP3 GR4
Assist	Assistance group
Urg	Urgence group
Door	Door group
In#1	Input 1 group
In#2	Input 2 group
In#3	Input 3 group
In#4	Input 4 group
In#5	Input 5 group
1	Mini display Group 1
2	Mini display Group 2
3	Mini display Group 3
4	Mini display Group 4
5	Mini display Group 5
6	Mini display Group 6
Buzzer	Mini Display Buzzer ON/OFF
Present	Mini Display Present ON/OFF
Monitor	Filter call list

**ID:** This is the numbering of the route in the iCall 220 SIP-Touch. Up to 20 routes can be set.

**Route name:** This is a name for the route.

<b>Profile: repetitions:</b>	This is where groups are entered that are called in the Netrix when a call is made. There is the option of setting 4 different groups with corresponding number of repetitions. The group that was set last is the group that is called once the previous repetitions have finished and will be repeated until the call is cancelled. The time between successive repetitions can be adjusted in the settings page.
<b>Assist:</b>	This is where the group is entered which has to be called in the Netrix if a call for assistance takes place. The time between successive repetitions can be set in the settings page.
<b>Urg:</b>	This is where the group is entered which has to be called in the Netrix if an urgency call takes place. The time between successive repetitions can be set in the settings page.
<b>Door:</b>	This is where the group is entered which has to be called in the Netrix if a door call takes place. This type is only redirected through to the Netrix only once. It is important to note that there is no room status 'Door' and the room retains its current room status when receiving a door contact call.
<b>In#1-5:</b>	This is where the group is entered that needs to be called through input 1 up to and including input 5 from the IO.
<b>1 - 6:</b>	If mini displays are used set up can be done here which will determine which mini display groups will be visible on the mini displays in the room.
<b>Buzzer:</b>	If mini displays are used, set up can be done here to determine whether the buzzer on the mini display will buzz in the room.
<b>Present:</b>	If mini displays are used, set up can be done here to determine whether presences should be visible on the mini displays.
<b>Monitor:</b>	This is where a choice can be made as to which locations need to be filtered in the call list.



Full IP nursecall

Demo

Addresses

Rooms

**Routes**

Time Scheme

GP

IO

Display Info

Room Displays

Locations

Locations Monitor

Room Configuration

Settings


Log

Info

### Routes

ID	Route name	Profile	repetitions	Assist	Urg	Door	In#1	In#2	In#3	In#4	In#5	1	2	3	4	5	6	Buzzer	Present	Monitor
1	Route 1	5:1	5:1	5:1	15	15	5	5	0	0	0	0	0	0	0	0	0	0	0	Level 1
2	Route 2	6:1	7:1	8:1	9	6	6	6	0	0	0	0	0	0	0	0	0	0	0	Level 1
3	Route 3	7:1	7:1	7:1	7	7	7	7	0	0	0	0	0	0	0	0	0	0	0	Level 1

Figure 26: Overview of the routes



Full IP nursecall

Demo

Addresses

Rooms

Routes

Time Scheme

GP

IO

Display Info

Room Displays

Locations

Locations Monitor

Room Configuration

Settings

Log

Info

### Edit route: 1

Route name:

First address:

Second address:

Third address:

Last address:

Assistance:

Urgence:

Door:

Input 1:

Input 2:

Input 3:

Input 4:

Input 5:

Monitor: Level ▼

Repetitions:

Repetitions:

Repetitions:

Group 1	Group 2	Group 3	Group 4	Group 5	Group 6	Buzzer	Present
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Figure 27: Modification of the routes

### 3.2.4. Time Scheme

On the page entitled Time scheme you will find an overview of all time schedules. A time scheme is a schedule which is used to obtain settings and functionality for a specific room dependant on the current time and day of the week.

For example during the night other groups may be called in Netrix than during the day. Or by making use of time schedules other information can be displayed at the weekend on mini displays than during the week.

ID	0-8
Name	Name
Time	Point in time
M t w t f s s	Day of the week

**Active Period:**

This is the actual active period.

**ID:**

This is the numbering of the time schemes in de iCall 220 SIP-Touch. Up to 8 time schedules can be set up.

**Name:**

This is what the time scheme is called.

**Time:**

This is the point in time where the time scheme becomes active. The active period indicator in this page corresponds with the ID of this time scheme.

**M t w t f s s:**

This is an indication of the days of the week (Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, Sunday) where switching needs to take place at the set time. It could for example therefore be set up that a time scheme only becomes active at 11o'clock on Friday and Saturday.

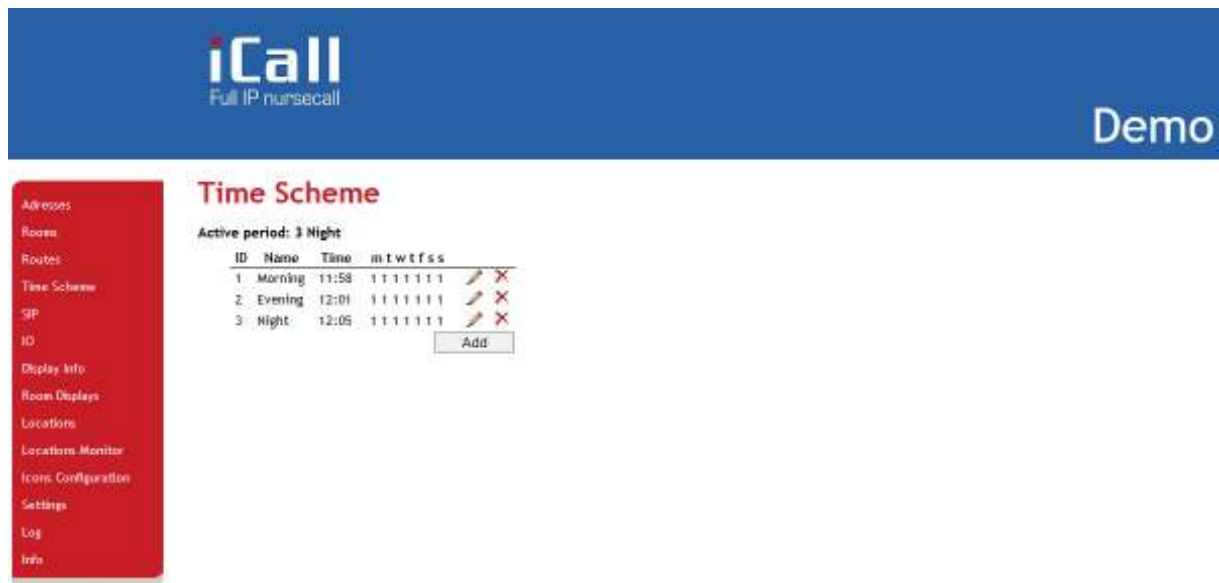


Figure 28: Overview of a time schedule

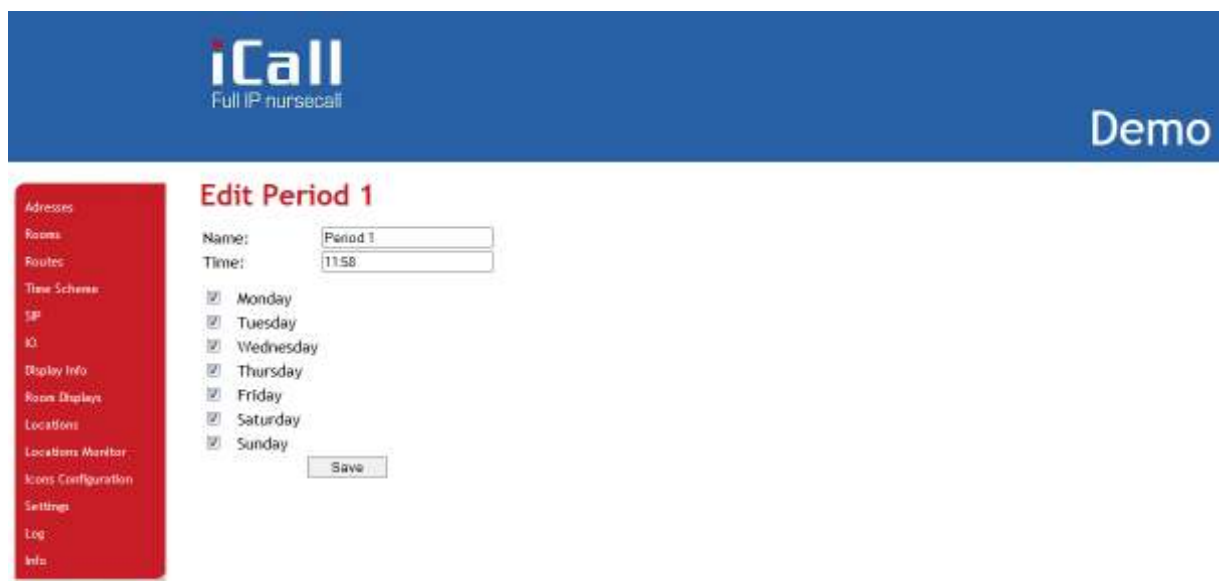


Figure 29: Modification of a time schedule

The above method can be used to switch between periods at specific times which have been locally set in the unit. It is also possible to determine the active periods through the Period Selector without entering concrete times and days in **time schemes**.

To do this the selection box '**PS enabled**' in the settings page needs to be ticked and the location entered. The location name must correspond with the location that is set in the Period Selector. For more info see chapter *Periods*.

### Period Selector

PS enabled



Location

Figure 30: Period Selector On/Off

The time scheme page has also been reduced to a page in which only the name can be modified, see Figure 31.

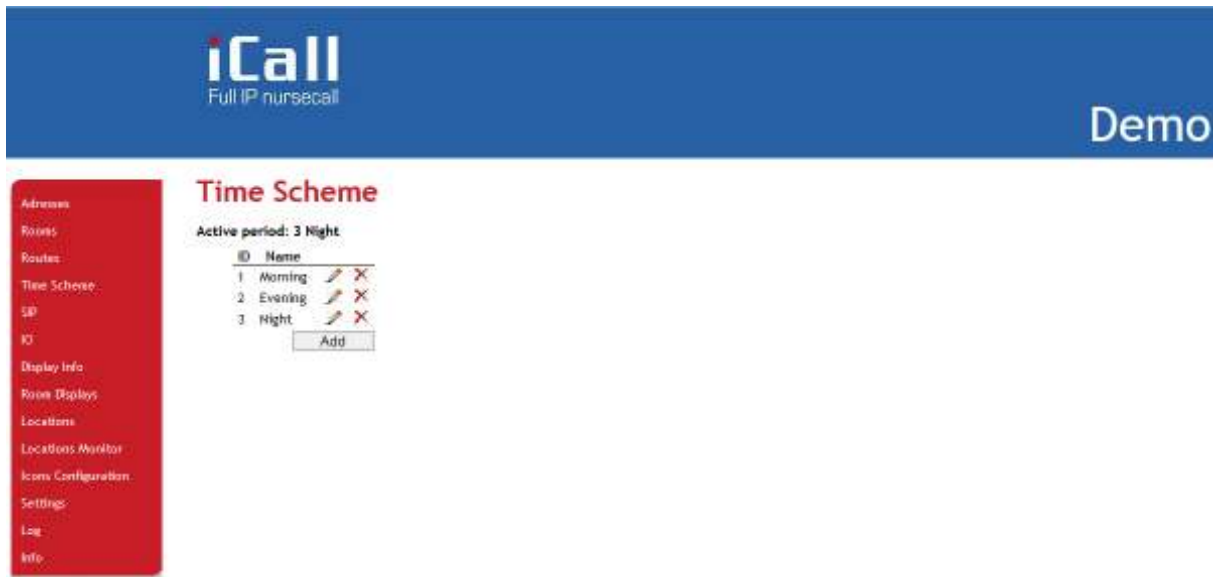


Figure 31: Overview of a time scheme (PS Enabled)

### 3.2.5. SIP

All settings can be adapted for use of the integrated SIP client in the SIP page. The client needs to register with a PBX and support the following codes: **G.711 A-law** and **μ-law**.

It is also possible to apply an Acoustic Echo Cancellation (AEC) filtering and to use DTMF tones to adjust a call in a room during a conversation.

Server	PBX IP address
Port	Port
Username	Username
Password	Password
Register	Registration ON/OFF
Registered	Actual registration status
Volume	Volume of SIP conversations
Buzzer volume	Volume of Buzzer
MIC	Microphone strengthening
Re-reg time	Registration-interval
AEC enable	AEC ON/OFF
AEC Threshold	AEC threshold
AEC Speed	AEC speed
AEC Force	AEC strength
AEC Sustain	AEC length of suppression
DTMF enable	DTMF enable ON/OFF
DTMF char	DTMF character (0-9)

<b>Server:</b>	The PBX IP address. The SIP client is tested and released on NEC, Alcatel and FreePBX (Asterisk based).
<b>Port:</b>	The port used for SIP messaging can be set here. By default it is set to 5060 but can be modified if necessary.
<b>Username:</b>	The username that is reserved in the PBX for this SIP client.
<b>Password:</b>	The password for this username.
<b>Register:</b>	Turning PBX registration on or off.
<b>Registered:</b>	Actual registration status on the PBX
<b>Volume:</b>	The volume setting for SIP calls. This can be modified here as well as through the touch screen in the sip client application.



<b>Buzzer Volume:</b>	A second volume can be set here to determine how loud the buzzer should sound in call following. It is thus possible to set different volumes for conversations and the buzzer.
<b>MIC:</b>	The internal recording volume of the microphone.
<b>Re-reg time:</b>	The interval in seconds between new registrations.
<b>AEC enable:</b>	Acoustic Echo Cancellation ON/OFF.
<b>AEC Threshold:</b>	Acoustic Echo Cancellation threshold.
<b>AEC Speed:</b>	Acoustic Echo Cancellation speed.
<b>AEC Force:</b>	Acoustic Echo Cancellation strength.
<b>AEC Sustain:</b>	Acoustic Echo Cancellation length of suppression.
<b>DTMF enable:</b>	DTMF enable ON/OUT. If ticked it will be possible to adjust a call during a SIP conversation by pressing a defined button (0-9)
<b>DTMF char:</b>	DTMF character which can be pressed to adjust a call.

**iCall**  
Full IP nursecall

Demo

**SIP**

Server: 192.168.30.23  
Port: 5060  
Username: 621  
Password: 0000  
Registrar: ☒  
Registered: No  
Volume: 75  
Buzzer Volume: 75  
MIC: 70  
Re-reg time: 3600

**AEC Settings**

Enable: ☒  
Threshold: 0.05  
Speed: 0.15  
Force: 30  
Sustain: 100

**DTMF Settings**

Enable: ☒  
Char: 2  
Save

Figure 32: SIP setting

### 3.2.6. Display Info

In the Display info page you can choose which type of info from the iCall calling system you want to see in the overview page and corridor displays. For example it is possible to set it up in such a way that you see 5 characters from the room number and then 15 of the location.

The following options are available:

- Room (RO)
- Type (TY)
- Addition (AD)
- Location (LO)
- Nurse (NU)

Place the cursor in the desired text box, select the variable and number of characters then press insert. The correct code for this will then be automatically added to the existing current configuration. Press Save to save.



Figure 33: Display Info

### 3.2.7. IO

The IO page allows one to establish how the inputs and outputs of the iCall 220 SIP-Touch should be configured.

There are 5 available outputs which can have the following functions:

- Call
- Toilet
- Present
- Domotics 1
- Domotics 2
- Domotics 3
- Domotics 4
- Not Defined

There are also 5 available inputs, which can have the following functions:

- Call
- Toilet
- Emergency
- Door
- Present
- Domotics 1
- Domotics 2
- Domotics 3
- Domotics 4
- Not Defined

It is possible to choose the level on which an input gets triggered, either high or low.

Addresses

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Routes

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### Input/Output

Input 1:	Urgence ▾	Level:	Normal Open ▾
Input 2:	Toilet ▾	Level:	Normal Open ▾
Input 3:	Urgence ▾	Level:	Normal Open ▾
Input 4:	Door ▾	Level:	Normal Open ▾
Input 6:	Present ▾	Level:	Normal Open ▾

Output 1:	Domotica 1 ▾
Output 2:	Toilet ▾
Output 3:	Present ▾
Output 4:	Not defined ▾
Output 5:	Call ▾
Relay:	Call ▾

Domotics 1:	Domotica 1
Domotics 2:	Domotica 2
Domotics 3:	Domotica 3
Domotics 4:	Domotica 4

Figure 34: IO

### 3.2.8. Room Displays

Up to 6 groups can be established to work with mini displays in the Room displays page. Each group can contain up to 3 different locations where the asterisk (\*) is a wildcard. A wildcard allows all calls from all locations to be displayed.

In the page entitled Routing you can select which groups you want to see on the mini display for each route if the route in question is active for the room where the display is located.



Figure 35: Rooms displays

### 3.2.9. Locations

On this page you can assign the various locations present in the building names.



Figure 36: Overview of locations.

A location can be added by clicking on the **Add** button. To modify a location click on *Edit* (). Figure 37 illustrates how to modify a location name.

A location can be removed by clicking on *Delete* ().



Figure 37: Modification of locations.

### 3.2.10. Locations Monitor

It is possible to group some locations into one specific name for filtering the calls in the nurse desk application. For example, the system is installed over two buildings with each 3 levels. We only want to see Level 1,2 and 3 of building one in the calls list of the nurse desk application. The other calls need to be hidden.

To Achieve this we make a name 'Building 1' with those 3 levels selected, see Figure 38.



Figure 38: Locations monitor

Another filter can be added by clicking on the **Add** button. To modify a location monitor click on *Edit* (✎).

A locations filter can be removed by clicking on *Delete* (✖).

It is possible to choose a different location filter for each period. To achieve this select the wanted locations monitor in your routes configuration, see 3.2.3.

- Addresses
- Rooms
- Routes
- Time Scheme
- SP
- ID
- Display Info
- Room Displays
- Locations
- Locations Monitor
- Icons Configuration
- Settings
- Log
- Info

### Edit 1: Building 1

Name:

☒ Level 1

☒ Level 2

☒ Level 3



### 3.2.11. Icons configuration

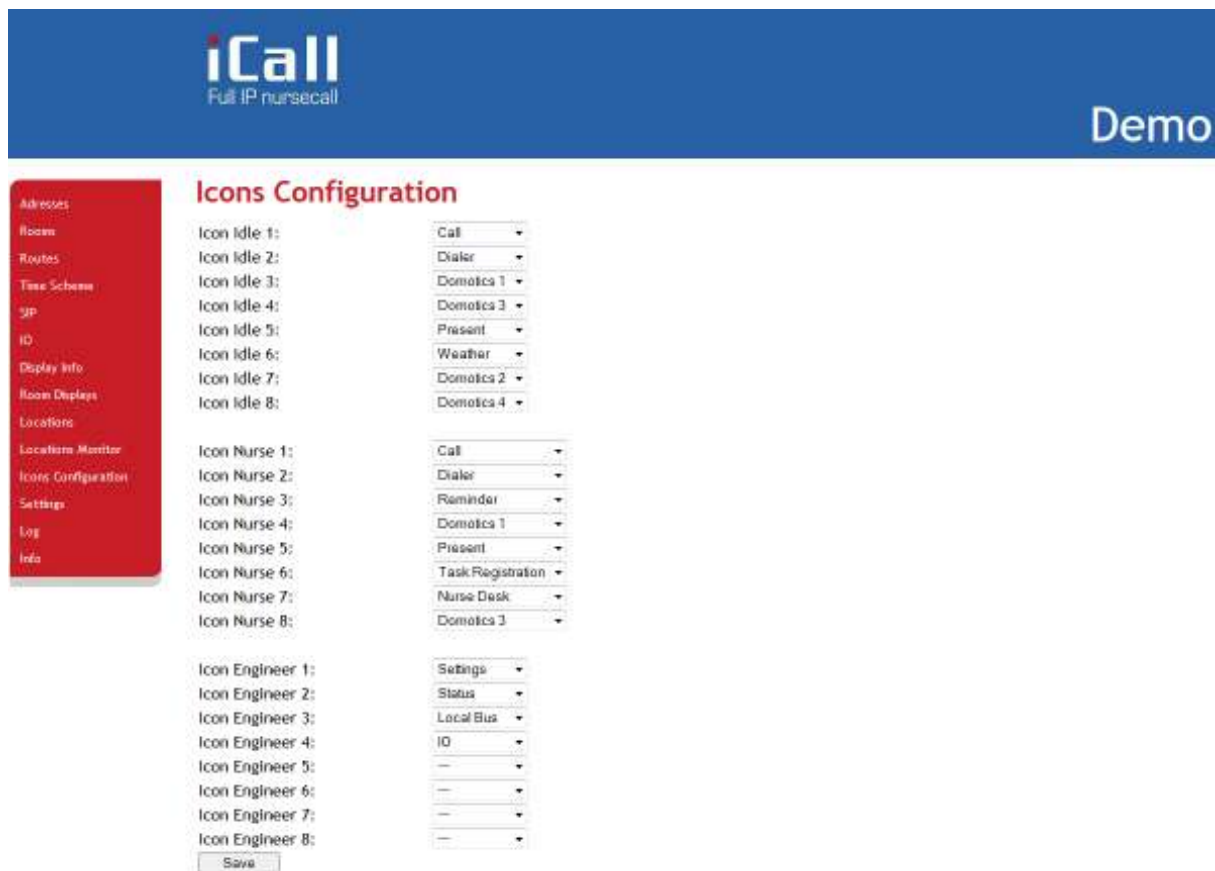


Figure 39: Icons configuration

The Icons Configuration page allows one to configure what icon need to be visible on the main screen of the unit for the 3 different states (Idle, Nurse and Technician).

The following icons are available:

Idle	Nurse	Technician
Call	Call	Settings
Present	Present	Local Bus
Weather	Nurse Desk	IO
Dialer	Dialer	Status
Domotics 1	Domotics 1	Domotics 1
Domotics 2	Domotics 2	Domotics 2
Domotics 3	Domotics 3	Domotics 3
Domotics 4	Domotics 4	Domotics 4
	Reminder	

### 3.2.12. Settings

Various settings such as IP settings, Customer name, Netrix and iLink settings, language and other settings can be configured on the setting page.

<b>IP Settings</b>	
IP address	Static IP address
Subnet	Subnet
Gateway	Gateway
<b>Web Settings</b>	
Language	Language
Client name	Client name
Device name	Device name
New Password	Password
Repeat password	Password
<b>Server Settings</b>	
State primary Netrix	Status of Netrix connection (1st)
Calls to Netrix	Netrix on/off
Calls to	Send to group or profile
Primary Netrix IP	First Netrix IP address
Secondary Netrix IP	Second Netrix IP address
Netrix Port	Netrix port
Cyclic Sending	Cyclic sending of ALIVE message
Cyclic Group	Group where ALIVE message is sent to
Cyclic Time (s)	Interval in seconds that the ALIVE message is sent to the Netrix
State iLink	Status of the iLink connection
Calls to iLink	iLink on/off
iLink IP	iLink IP address
iLink Port	iLink port
Broadcast calls	Broadcast on/off
UDP broadcast IP	Broadcast IP address
UDP broadcast Port	Broadcast port
NTP time update	NTP on/off
NTP server IP	NTP IP Server
FTP Server IP	FTP IP address
FTP location	FTP directory of update files
<b>Call Settings</b>	
Rep. Time calls	Interval time of calls to the Netrix
Rep. Time assistance	Interval time of assistance-calls to the Netrix
Rep. Time urgency	Interval time of urgent calls to the Netrix
Profile/group errors	Error group in the Netrix
No errors	No error group in the Netrix
Call following	Call following function on/off
Toilet call	Toilet call function on/off
Present to Netrix	Forward presences to the Netrix
Away to Netrix	Forward absences to the Netrix
<b>Period Selector</b>	

PS enabled	PS function on/off
Location	Location of PS function
<b>Other Settings</b>	
Address Registration	Address registration on/off
Manual DN on	Manual switch between DN locations possible or not possible
Bosch to netrix	Send Bosch call to the netrix transparently
Send LB time	Send time through to mini displays
Display Bus Interface	Drive Corridor displays via LB connector
Show corridor time	Display time on corridor display
Corr. Speed	Speed of text on corridor display
<b>Buzzer Settings</b>	
Buzzer Call	Buzzer on/off for type of Call
Buzzer Toilet	Buzzer on/off for type Toilet
Buzzer Assistance	Buzzer on/off for type Assistance
Buzzer Info 1	Buzzer on/off for type Info 1
Buzzer Info 2	Buzzer on/off for type Info 2
Buzzer Info 3	Buzzer on/off for type Info 3
Buzzer Info 4	Buzzer on/off for type Info 4
Buzzer Info 5	Buzzer on/off for type Info 5
<b>Show Settings</b>	
Show Present	Display type Present in call list
Show Call	Display type Call in call list
Show Toilet	Display type Toilet in call list
Show Assistance	Display type Assistance in call list
Show Urgence	Display type Urgency in call list
Show Code Blue	Display type Code Blue in call list
Show Info 1	Display type Info 1 in call list
Show Info 2	Display type Info 2 in call list
Show Info 3	Display type Info 3 in call list
Show Info 4	Display type Info 4 in call list
Show Info 5	Display type Info 5 in call list
<b>CF Buzzer Settings</b>	
Buzzer Present	CF Buzzer on/off for type Present
Buzzer Call	CF Buzzer on/off for type Call
Buzzer Toilet	CF Buzzer on/off for type Toilet
Buzzer Assistance	CF Buzzer on/off for type Assistance
Buzzer Urgence	CF Buzzer on/off for type Urgency
Buzzer Code Blue	CF Buzzer on/off for Code Blue
Buzzer Info 1	CF Buzzer on/off for type Info 1
Buzzer Info 2	CF Buzzer on/off for type Info 2
Buzzer Info 3	CF Buzzer on/off for type Info 3
Buzzer Info 4	CF Buzzer on/off for type Info 4
Buzzer Info 5	CF Buzzer on/off for type Info 5
<b>Privacy Settings</b>	
Total Block	Totally block incoming SIP conversations
Ringtone	Turn ring tone on with incoming call

Addresses  
Routes  
Time Scheme  
SIP  
IO  
Display Info  
Room Displays  
Locations  
Locations Monitor  
Icons Configuration  
Settings  
Log  
Info

## Settings

**IP settings**

IP address: 192.168.30.142

Subnet: 255.255.255.0

Gateway: 192.168.30.254

**Web settings**

Language: English

Clientname: Demo

Device name: Sip Display

Username: web

New password:

Repeat password:

**Server settings**

State primary Netrix: Unknown

Calls to Netrix: ☒

Calls to: ☒ Group ☐ Profile

Primary Netrix IP: 192.168.30.144

Secondary Netrix IP: 1.1.1.3

Netrix Port: 6000

Cyclic Sending: ☐

Cyclic Group: 100

Cyclic Time (s): 60

State iLink: Unknown

Calls to iLink: ☒

iLink IP: 192.168.30.144

iLink Port: 7475

Broadcast calls: ☒

UDP broadcast IP: 255.255.255.255

UDP broadcast Port: 7475

NTP timeupdate: ☒

NTP server IP: 192.168.30.6

FTP Server IP: 192.168.30.6

FTP location: /

Change settings

Update displays

Reboot displays

Reboot

Update iCall

Update Kernel

Figure 40: Settings.

### 3.2.13. [Log](#)

All important events and errors that have taken place in the system can be found under the page entitled Log. As such as calls, registrations, period switches and ping and server problems can be found in this overview. It is important to look at this list in case of problems.

All events are listed with date and time indicated, making it easy to refer back and see when the system wasn't functioning as it should. This list is only maintained locally and will be empty following every reboot of the system.



Figure 41: Log

### 3.2.14. [Info](#)

More information can be found on the current state of the system and the Indigo Care contact details on the page entitled Info.

The following details can be found here:

- System time: Current system time
- Uptime: System running time
- iCall Version: Current firmware version of iCall software
- File system Version: Current file system version
- Kernel Version: Current kernel version
- CPU: CPU usage
- RAM: Current amount of MB RAM in use



Figure 42: Info

## 4. GUI

There are three modes for functionalities: the standard functionality for residents, a second level for nurses and a third level for technicians. By logging in one can end up in the technicians mode where system settings and statuses can be modified or viewed. This mode is password protected thus not accessible to everyone.

### 4.1. Residents

The residents screen is the default mode when the unit is in idle state. All applications in this mode are available for everyone, keep this in mind when placing an icon.



Figure 43: Idle screen (Residents)

#### 4.1.1. Call / Assistance

The room will get into call state when the call button is pressed and consequently nurses will be informed help is needed in that specific room. The info banner in the bottom will change colour to red indicate that the room is in call state. The call button will also be disabled in this case.





Figure 44: Room in Call state

When the room is in present state (ie. a nurse is present in the room), the call button changes into an assistance button, see Figure 46. Pressing the assistance button will launch an assistance call and the nursing staff will be notified that the present nurse needs assistance. The info banner will change colour, alternating between green and red. The iButton LEDs will also change colour to match the info banner.

#### 4.1.2. Present

The present button needs to get pressed when a nurse enters the room. This can be the case when the room is previously in idle state, and the nurse is present in the room for checking up, or when the room is in call state and the resident needs help. This presence info can be forwarded to other nurses or the iLink server in case logging of calls and presences is required.

It is possible to have a task registration system (Care Package) integration when using a nurse identification manner, e.g an iButton and an iLink server is available. If an iButton is not used, it's still possible to have a unique ID number by checking the Show login screen in the settings page, see Figure 47. Note that this function is not a password protected presence confirmation but solely an identification manner.

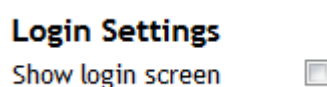


Figure 45: Show login screen



Figure 46: Room in Present state

As seen in Figure 46, the available icons change when the room is in present mode. This is because the current functionality mode of the device has changed. More info about this mode in 4.2.



Figure 47: Login screen for presence

### 4.1.3. Weather

The weather application contains information about the weather of the current day and a 3-day prediction. This information gets updated automatically every 4 hours. Please note that an iLink with an active internet connection is required for this functionality. Location and language can be configured only in the iLink settings.



Figure 48: Weather application

### 4.1.4. Phone Call

With the phone call application it is possible to make a sip call to other rooms or DECT telephones, provided a PBX with registered devices is available. The unit has to be registered, see 3.2.5.

To make a phone call, enter the extension number of the callee, and press Call. To cancel to conversation, press Cancel. The microphone can be muted by pressing the mic mute button. The sound volume can also be set higher or lower.



#### 4.1.5. Domotics

A simple Domotics system can be made using the Domotics buttons, inputs and outputs. In the output types of IO is the type Domotics 1-4 available. When you click the Domotics 1 button on screen, the output configured as Domotics 1 will be activated. In the settings page one can enable the 'Domotics Pulse', this will change the operation of these Domotics buttons. In this mode, the output will be enabled for the duration that the button is pressed with some delay. In default mode, the output will be enabled with one press and disabled with the next press.

#### **Other Settings**

Address Registration	<input checked="" type="checkbox"/>
Bosch to netrix	<input type="checkbox"/>
Domotics Pulse	<input type="checkbox"/>
Send LB time	<input checked="" type="checkbox"/>

Figure 49: Domotics Pulse enable

It's also possible to configure the inputs as a Domotics type. The operation is the same as if the inputs were pushbuttons and can be used simultaneously.

The text under the buttons can be changed in the IO page of the webinterface, i.e Domotics 1 can be named 'Light Toilet' for example.

## 4.2. Nurses

### 4.2.1. Call / Assistance

See 4.1.1.

### 4.2.2. Present

See 4.1.2

### 4.2.3. Nurse Desk

The Nurse Desk application gives an overview of all active calls and presences. It is possible to filter this list based on the originating location of the call, for example if only calls from the 1<sup>st</sup> floor need to be visible. This type of filtering can be fixed or time-based, for example if during the day only the 1<sup>st</sup> floor calls need to be visible and during the night all calls need to be listed. For more information about this feature go to the 'Routes' paragraph (Monitored locations).

The fields of each call that needs to be displayed can be customised, for example if you only need to see room number, type of call and location. A maximum of 5 fields is possible and consists of *ROOM*, *ADDITION*, *TYPE*, *LOCATION* and *NURSE*.



Figure 50: Nurse Desk

#### 4.2.4. Phone Call

See 4.1.4

#### 4.2.5. Domotics

See 4.1.5

#### 4.2.6. Reminder

The reminder application is a convenient way of getting a reminder after a selected timeframe has passed. Choose the duration and press to start to begin with the countdown. A message will be send to the Netrix after the countdown has completed. Use this message to notify the desired nursing staff.



Figure 51: Reminder function



### 4.3. Technicians

If modifications to the system settings are required this can be done via the touch interface. First login must take place by holding down the grey info bar at the top right for a couple of seconds. A login screen will then appear as depicted in . The password is **456**.



Figure 52: Login screen for technicians

#### 4.3.1. Domotics

See 4.1.5

#### 4.3.2. Status

In the status screen all information about the system settings is visible, for example the IP addresses of servers, SIP registration, and more. The status of connections are evaluated and refreshed automatically when the Status screen is opened. It is possible to force an update when viewing this screen by pressing the refresh button.





Figure 53: Status screen

#### 4.3.3. Settings

See Chapter 3.1 for more information.

#### 4.3.4. Local Bus

In the local bus screen you can change the room number, addition and location of addresses and rooms. To do this press on the room number you want to change to select it, and then press 'Edit'. You will see a keyboard to change the number. The same method applies for changing the location or addition.



Figure 54: Local bus screen

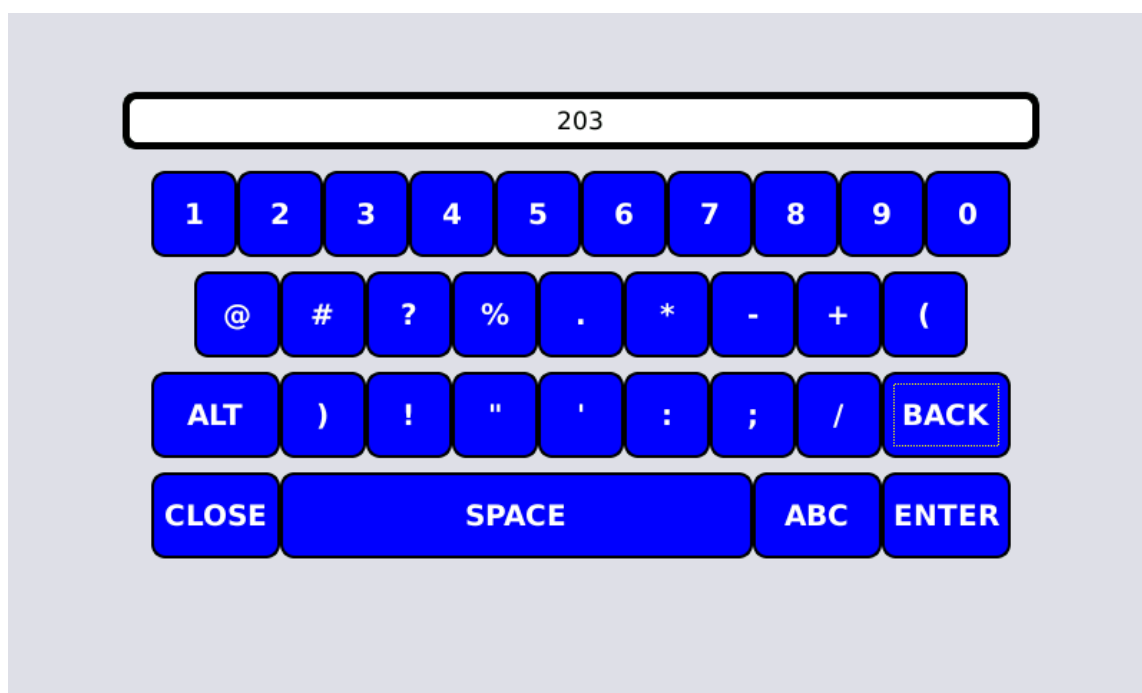


Figure 55: Changing the room number

#### 4.3.5. Input / Output

In the input / output screen you can couple all different kind of inputs and outputs with specific IO pins on the device. For the input is it possible to select whether the input is normal open or normal closed. The current status of in-and outputs is also visible.

The screenshot shows the iCall IO configuration screen. At the top, the status bar displays 'Monday, August 11, 2014', the 'iCall' logo, and the time '11:09'. The main area is divided into two sections: 'Inputs' and 'Outputs'. Each section contains a list of inputs/outputs with dropdown menus for selection and status indicators. At the bottom, there is a home button, a central display showing '203', and a refresh button.

Inputs				Outputs		
Input 1	Call	Low	Normal Open	Output 1	Call	Low
Input 2	Toilet	Low	Normal Open	Output 2	Toilet	Low
Input 3	Door	Low	Normal Open	Output 3	Present	High
Input 4	Not Defined	Low	Normal Open	Output 4	Not Defined	Low
Input 6	Not Defined	Low	Normal Open	Output 5	Not Defined	Low
				Relais	Not Defined	Low

Figure 56: IO screen