2N® SIP Speaker Horn

SIP audio

Installation Manual

Firmware:
Version: 2.8

www.2n.cz

The 2N TELEKOMUNIKACE a.s. is a Czech manufacturer and supplier of telecommunications equipment.

The product family developed by 2N TELEKOMUNIKACE a.s. includes GSM gateways, private branch exchanges (PBX), and door and lift communicators. 2N TELEKOMUNIKACE a.s. has been ranked among the Czech top companies for years and represented a symbol of stability and prosperity on the telecommunications market for almost two decades. At present, we export our products into over 120 countries worldwide and have exclusive distributors on all continents.

2N TELEKOMUNIKACE a.s. administers the FAQ database to help you quickly find information and to answer your questions about 2N products and services. On www.faq.2n.cz you can find information regarding products adjustment and instructions for optimum use and procedures „What to do if...".

2N TELEKOMUNIKACE a.s. hereby declares that the 2N® product complies with all basic requirements and other relevant provisions of the 1999/5/EC directive. For the full wording of the Declaration of Conformity see the CD-ROM (if enclosed) or our website at www.2n.cz.

The 2N TELEKOMUNIKACE a.s. is the holder of the ISO 9001:2009 certificate. All development, production and distribution processes of the company are managed by this standard and guarantee a high quality, technical level and professional aspect of all our products.

Content:

1. Product Overview

Here is what you can find in this section:

- 1.1 Components and Associated Products
- 1.2 Terms and Symbols

Basic Properties

2N® SIP Speaker Horn is an active protective solution for your premises. Cameras and security systems are passive elements that inform you of any crime committed. Criminals are very proficient in avoiding cameras and cannot be scared off by common alarm systems. Although you are connected to the Alarm Response Centre (ARC), burglars may cause damage before the police arrives. 2N® SIP SpeakerHorn, however, can help you drive away potential intruders by very loud live announcements, which enhances safety and protection of your property.

2N® SIP Speaker Horn provides a clear and loud speech in critical situations. Together with cameras or VMS for remote communication, live announcements help avoid criminal acts. The 2N® SIP Speaker Horn devices are easy to install: IP-based speakers enhance camera systems at parking lots, public spaces and industrial objects. They can work as standalone units or be simply interconnected with existing VMS phone systems via IP (VoIP PBX). Thanks to PoE, they can be connected to IP with a single network cable. 2N® SIP Speaker Horn can be used for live paging or playing scheduled or pre-startable messages. It is equipped with an automatic audiotesting function, which can check the speakers for proper functions. 2N® SIP Speaker Horn makes outdoor spaces or places with critical infrastructure safer.

2N® SIP Speaker Horn is a versatile sound transmission system for IP networks. It is designed as a universal VoIP phone with an audio output. It finds a variety of applications – in schools, hospitals, office buildings, hotels, production halls, shopping centres, bus terminals, airports and so on.

2N® SIP Speaker Horn can be controlled via a configuration web interface. 2N® SIP Speaker Horn communicates with the other audio system components via the SIP Proxy or directly via a specified address.

Advantages of Use

- Clear and loud speech
- Announcement planner
- ONVIF for easy integration with VMS
- Noise detector
- Easy installation with only one cable (Audio + PoE)
- VoIP PBX support (SIP)
- Excellent reliability through automated audio tests
- Integrated administration web server
- Streamed audio support
- Applicable as standard VoIP telephone/communicator
- DTMF detection according to RFC2833, in-band and SIP-INFO

Basic Features

- 10/100Base-TX LAN interface
- 24 V DC / 2 A or PoE 802.3af supply
- Integrated 8/25 W amplifier (depending on power supply)

1.1 Components and Associated Products

Basic Unit

Part No. 914422E 	• 2N® SIP Speaker Horn

Power Supply

Part Numbers: 91378100 91378100E 91378100US 	• PoE injector – without cable • PoE injector – with EU cable • PoE injector – with US cable • For power supply of intercom via **ethernet** cable when PoE switch is not available.
Part No. 91341481E 	• Stabilised 12 V / 2 A power supply needs to be used when no PoE is available.
Part No. 932928 	• For external power supply of the lock with 12 V AC voltage.

VoIP Telephones

Part No. 91378357 	• Grandstream GXV3240 VoIP video telephone • GXV3240 is the successor to the popular GXV3140 model, which allows comfortable video calls in the IP network. Touchscreen and keyboard control.
Part No. 91378358 	• Grandstream GXV3275 VoIP telephone • GXV3275 is the successor to the popular GXV3175 model, which allows comfortable video calls in the IP network. Touchscreen control.

Accessories

Part No. 914034B/W 	• Wall-mounted 8 ohm loudspeaker
Part No. 9137410E 	• External IP Relay – 1 output • Standalone IP device which can be controlled by **HTTP** commands sent by Helios IP intercom, which can thus control devices on unlimited distance.
Part No. 9137411E 	• External IP Relay – 4 outputs, PoE • Standalone IP device which can be controlled by **HTTP** commands sent by Helios IP intercom, which can thus control devices on unlimited distance.

Part No. 9159014EU/US /UK 	• 2N® 2Wire • (set of 2 adaptors and power source for EU/US/UK) • The 2N® 2Wire converter allows you to use existing wiring (2 wires) from your original door bell or door intercom to connect any IP device. You don't have to configure anything, and you only need one 2N® 2Wire unit at each end of the cable and a power source connected to at least one of these units. The 2N® 2Wire unit then provides PoE power not only to the second converter, but also to all other connected IP end devices.

Tip

- For more accessories and particular advice please contact your local distributor of 2N products.

1.2 Terms and Symbols

The following symbols and pictograms are used in the manual:

Safety

- Always abide by this information to prevent persons from injury.

Warning

- Always abide by this information to prevent damage to the device.

Caution

- Important information for system functionality.

Tip

- Useful information for quick and efficient functionality.

Note

- Routines or advice for efficient use of the device.

2. Description and Installation

In this section, we describe the **2N® SIP Speaker, Wall Mounted** product and its installation.

Here is what you can find in this section:

- 2.1 Before You Start
- 2.2 Mechanical Installation
- 2.3 Electric Installation
- 2.4 Product Description

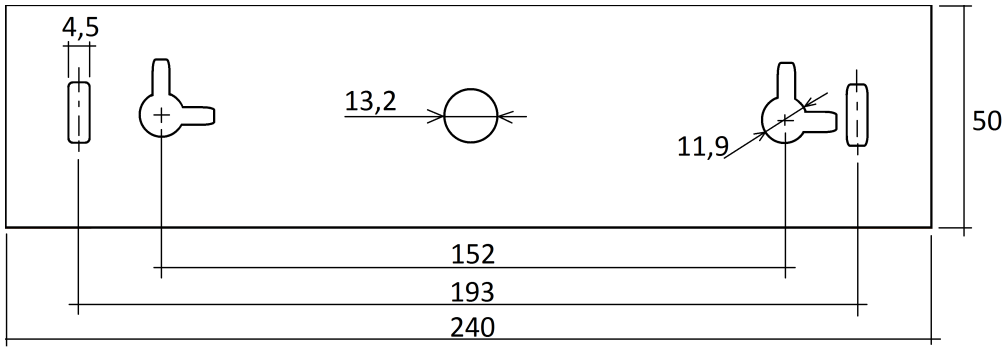
Product Completeness Check

Before installing this product, check whether the product delivery includes:

- 1x 2N® SIP Speaker Horn
- Quick User Manual

Surface Mounting

To mount your 2N® SIP Speaker, Wall Mounted unit on a wall or another solid surface use the speaker holder. Fit this holder with screws to keep the device in place. Follow the figure below while drilling the mounting holes.



Mounting holes

Speaker Holder

2.3 Electric Installation

Electric Installation Step by Step

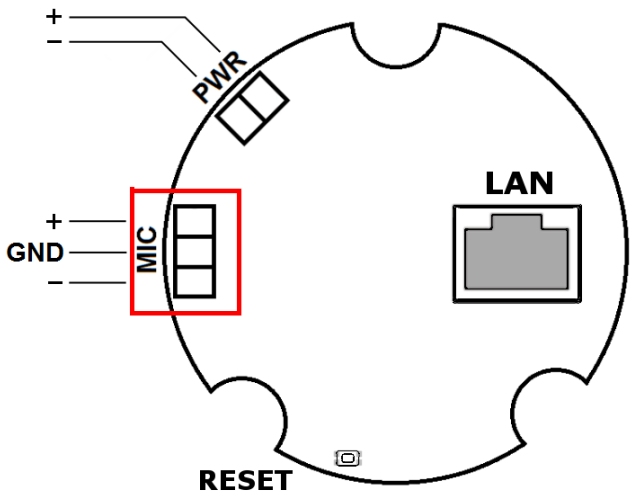
It is very easy to connect 2N® SIP Speaker Horn electrically. Follow the steps below to avoid equipment damage or electrical injury:

- Connect the aditional microphone
- Connect the UTP cable.
- Connect a 24 V power supply (unless PoE is used).

Caution

- Be sure to connect the 2N® SIP Speaker Horn power supply as the last step. The same applies to PoE supply from the LAN.

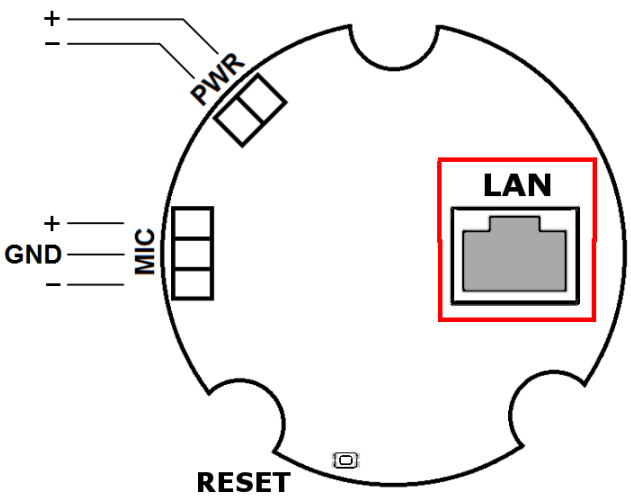
Microphone connection



Microphone connection

LAN Connection

2N® SIP Speaker Horn can be connected to a standard local area network using a LAN interface via the RJ-45 connector on the back panel. Always use CAT-5d or higher class cables for reliability reasons.



LAN Connection

The LAN interface is equipped with the Auto MDIX function for automatic straight or cross-over cable detection.

The LAN interface can also be used for the 2N® SIP Speaker, Wall Mounted power supply through active network elements or injectors meeting the IEEE 802.3af standard.

Note

- With PoE, the integrated amplifier power output is limited to 8 W. To utilise the maximum power output of the amplifier, feed 2N® SIP Speaker Horn from a 24 V DC / 2 A external power supply.

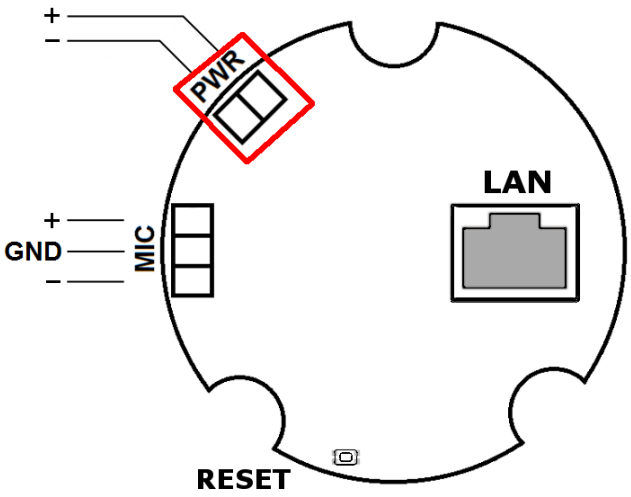
Caution

- We recommend the use of a LAN surge protection.

Power Supply Connection

2N® SIP Speaker Horn can be fed using active network elements or PoE injectors via the LAN interface. In case this option is unavailable, use a 24 V DC / 2 A (Part No. 914102E) power supply or another power supply on condition that you keep the

nominal values included in the Mechanical and Electrical Parameters subsection. Connect the 24 V DC power supply either to the back panel supply connector as shown on the figure below



Power Supply Connection

Warning

- If you use an adapter other than the recommended one, do not exceed the nominal supply voltage value of 24 V. Also make sure that the supply voltage polarity is correct. Exceeding nominal values and/or incorrect connection may lead to irreversible damage of the equipment.

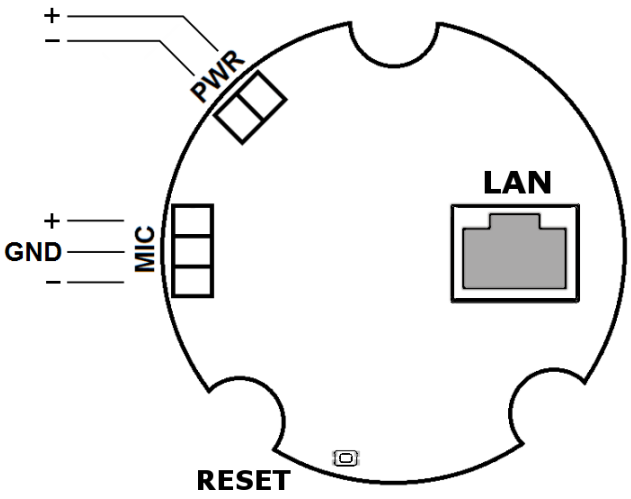
2.4 Product Description

2N® SIP Speaker Horn is an Ethernet audio converter designed for public sound distribution. It is connected to and communicates with the SIP Proxy server via telephone calls. This guarantees compatibility with all SIP-based systems.

Use an integrated web interface for 2N® SIP Speaker Horn configuration.

Apply the 2N® Helios IP Network Scanner to search all the 2N® SIP Speaker Horn units connected.

2N ® SIP Speaker Horn connection panel



2N® SIP Speaker Horn back panel

Connectors and Controls:

- LAN: 10/100BASE-TX RJ-45 connector
- MIC input – pins for microphone connection
- RESET button
- PWR: 24 V DC / 2 A power supply adapter connector

3. Function and Use

This section provides the basic and extended functions of the 2N® SIP Speaker, Wall Mounted product.

Here is what you can find in this section:

- 3.1 Configuration
- 3.2 Default Reset
- 3.3 Basic Functions
- 3.4 Downloads

3.1 Configuration

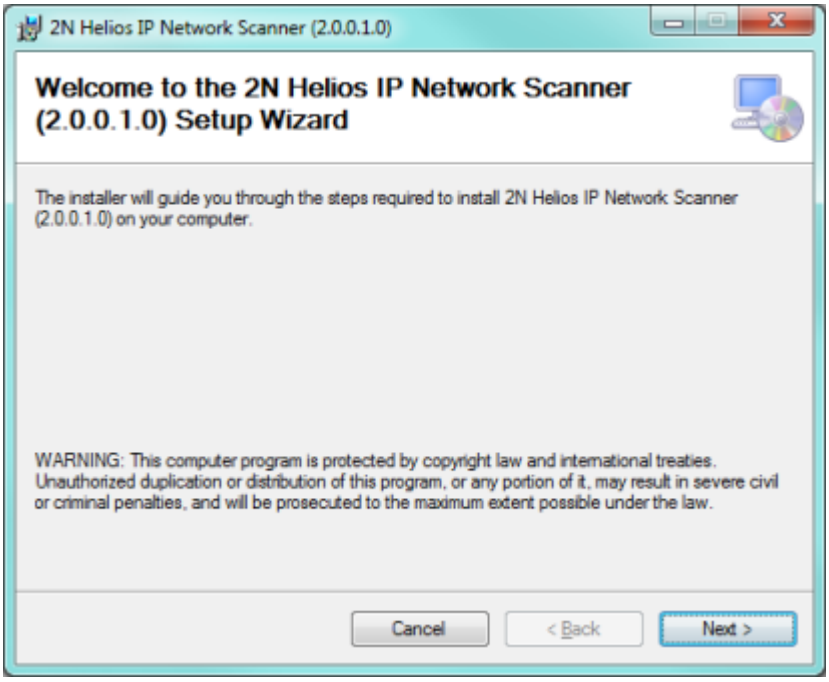
2N® SIP Speaker Horn is configured through an integrated administration web server.

Connect 2N® SIP Speaker Horn to the IP network and make sure that 2N® SIP Speaker Horn is powered.

Description of 2N ® Helios IP Network Scanner

The purpose of this application is to find the dynamic IP address of 2N® SIP Speaker Horn in the local IP network. The application can be downloaded from the 2N web sites www.2n.cz.

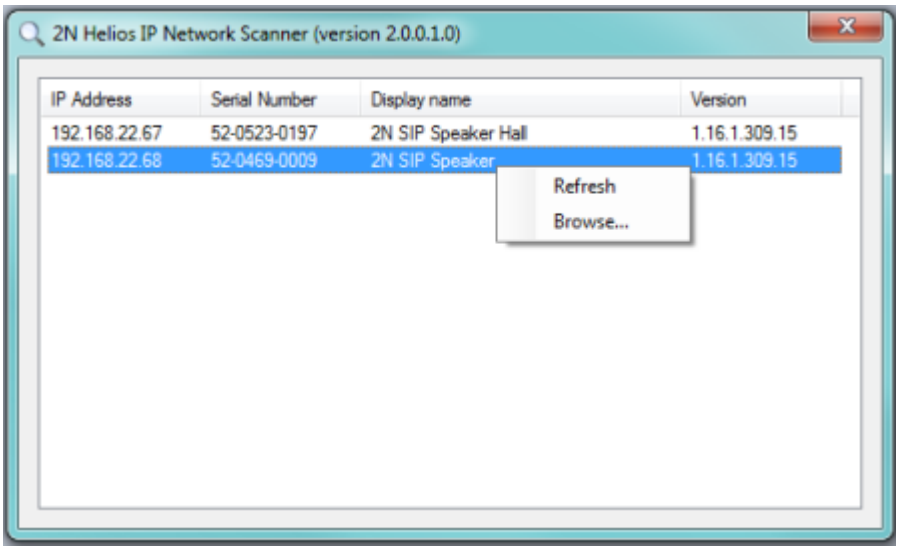
1. Run the 2N® Helios IP Network Scanner installer.
2. The installation Wizard will guide you through the installation.



2N® Helios IP Network Scanner Installation Wizard

3. After installing the 2N® Helios IP Network Scanner application, run the application using the *Start* menu of the Microsoft Windows operating system.

4. Upon launch, the application starts searching the LAN automatically for all 2N® SIP Speaker Horn with an assigned or statically set IP address. The devices are then listed in a table.



2N® Helios IP Network Scanner Window

5. Select the 2N® SIP Speaker Horn to be configured. Click on it with the right-hand mouse button and select *Browse...* to open the web browser window, log in to 2N® SIP Speaker Horn and start configuring as described in the Login subsection below.

Login

In the web browser enter the IP address of 2N® SIP Speaker Horn. Subsequently, a login screen will be displayed. The default login username and password are as follows:

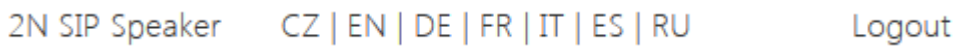
- Username: Admin
- Password: 2n

If the login screen does not appear, an incorrect IP address was entered into the web browser or the 2N® SIP Speaker Horn administration web server was turned off. If you are not sure of the IP address of 2N® SIP Speaker Horn, use the 2N® Helios IP Network Scanner application as described in the Description of 2N® Helios IP Network Scanner

subsection.Find how to switch on the administration web server in the Administration Web Server Switch-On subsection. Please check the IP address entered, or, if applicable, check the way the IP address was obtained as described at the beginning of subsection 3.1 Configuration.

Language Selection

You can select the language using the tag menu in the right-hand upper corner as shown in Figure below.



Language Selection

3.2 Default Reset

Factory Default Reset

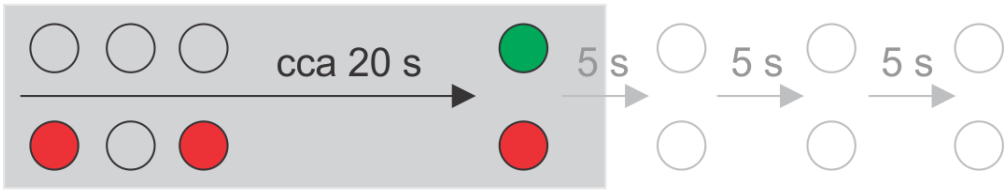
In some cases, it may be useful to reset the 2N® SIP Speaker Horn factory default values using the RESET switch on the back panel. Do so, for example, if 2N® SIP Speaker Horn ceases to respond due to, for example, incorrect LAN settings, LAN configuration changes, forgotten password and so on.

LAN Setting Change and Default Reset

2N® SIP Speaker Horn is equipped with a RESET button. Press the button shortly (< 1 s) to restart the system without changing configuration.

Follow the instructions below to identify the current IP address:

1. Press and hold the REST button – red LED comes on.
2. Wait until the red and green LEDs on the device come on simultaneously (approx. 20 s).
3. Release the RESET button.
4. The device announces the current IP address via the loudspeaker automatically.

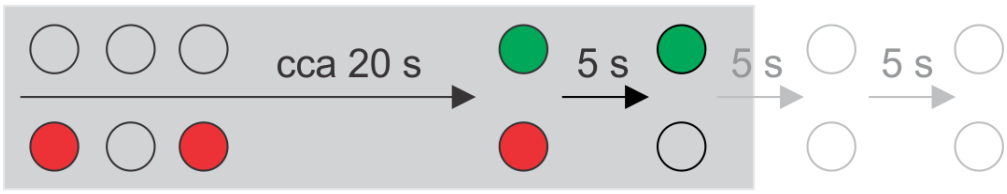


Hold button RESET

Follow the instructions below to switch on the Static IP address mode (DHCP OFF):

1. Press and hold the REST button.
2. Wait until the red and green LEDs on the device come on simultaneously (approx. 20 s).
3. Wait until the red LED goes off (approx. 5 s).
4. Release the RESET button.
5. The following network parameters will be set after restart:
   - IP address: 192.168.1.100

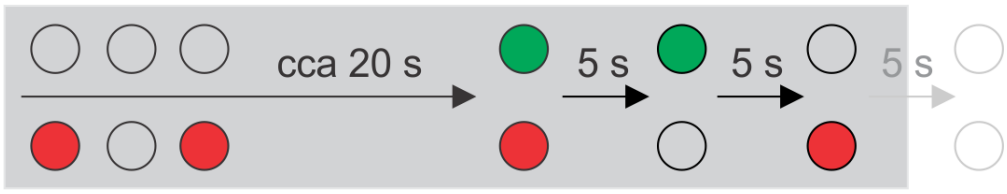
- Nework mask: 255.255.255.0
- Default gateway: 192.168.1.1



Hold button RESET

Follow the instructions below to switch on the **Dynamic IP address** mode (DCHP ON):

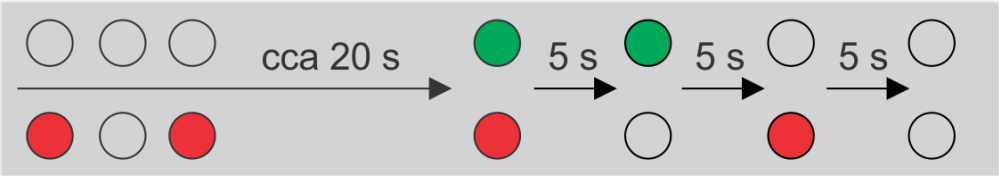
1. Press and hold the REST button.
2. Wait until the red and green LEDs on the device come on simultaneously (approx. 20 s).
3. Wait until the red LED goes off (approx. 5 s).
4. Wait until the green LED goes off and the red LED comes on again (another 5 s).
5. Release the RESET button.



Hold button RESET

Follow the instructions below to **reset the factory default values**:

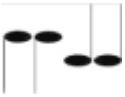
1. Press and hold the REST button.
2. Wait until the red and green LEDs on the device come on simultaneously (approx. 20 s).
3. Wait until the red LED goes off (approx. 5 s).
4. Wait until the green LED goes off and the red LED comes on again (approx. 5 s).
5. Wait until the red LED goes off (another 5 s).
6. Release the RESET button.

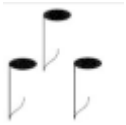
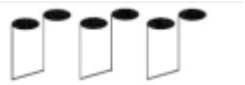


Hold button RESET

Operational Status Signalling

2N® SIP Speaker Horn signals acoustically changes of and transitions between variable operational statuses. There are different tone combinations for each status change. Refer to table below for the list of signals.

Tones	Meaning
	**User activated** Used when the user activation code is entered. The activation code is used for user (telephone directory position) activation. Refer to the Telephony Directory subsection for activation code settings (Configuration Manual).
	**User deactivated** Used when the user deactivation code is entered. The deactivation code is used for user (telephone directory position) deactivation. An inactive user cannot be called, but the call may be forwarded to the user substitute if predefined. Refer to the Telephony Directory subsection for deactivation code settings (Configuration Manual).
	**Calendar activated** Used for calendar activation. Use this function, for example, to enable user group ringing in an office. Refer to the Scheduler subsection for activation code settings (Configuration Manual).
	**Calendar deactivated** Used for calendar deactivation. Use this function, for example, to disable user group ringing in an office and forward the call(s) to a predefined telephone number (reception desk or user mobile phones). Refer to the Scheduler subsection for deactivation code settings (Configuration Manual).
	**Call prolongation confirmation signalling** The maximum call duration is set in 2N® SIP Speaker Horn for security reasons; refer to Miscellaneous subsection (Configuration Manual).

Tones	Meaning
	**Internal application launched** Upon **2N® SIP Speaker Horn** power up or restart, the **2N® SIP Speaker Horn** internal application is launched. A successful launch is signalled by this tone combination.
	**Connected to LAN, IP address received** When the internal application has been launched, **2N® SIP Speaker Horn** logs into the LAN. A successful login is signalled by this tone combination.
	**Disconnected from LAN, IP address lost** This tone combination signals that the UTP cable has been disconnected from **2N® SIP Speaker Horn**.
	**Invalid telephone number or invalid switch activation code** **2N® SIP Speaker Horn** allows you to store an extension number or enter the switch opening code. If the number/code is invalid, this tone combination is used.
	**Default reset of network parameters** Enter the default reset code for the network parameters within a 30-second timeout after power up. Refer to Factory Default Reset with Static IP Address and Factory Default Reset with DHCP Client ON for details.

Tones	Meaning
	Call end advance signalling You can set a call time limit in **2N® SIP Speaker Horn** to avoid call blocking. Push a button on your VoIP telephone to prolong the call.
	**Connected call when calling from a telephone to 2N® SIP Speaker Horn** When calling from your VoIP telephone to **2N® SIP Speaker Horn**, you get a short call connection tone.

Software

2N® Helios IP network scanner 3.0.4

Mechanical and Electrical Parameters

- **Dimensions:** diameter 237 mm, length 309,6 mm
- **Weight:** 2,3 kg
- **Color:** grey
- **Operating temperature:** -30 ˚C – +60 ˚C
- **Protection:** IP66
- **Instalation:** U-type holder made of stainless steel
- **External power supply:** 24 V DC / 2 A
- **LAN supply:** PoE IEEE 802.3af
- **LAN connection:** RJ-45 connector on back panel, 10/100BASE-TX with Auto-MDIX function
- **Supported protocols:** SIP2.0, SIPS (TLS), DHCP opt. 66, SMTP, 802.1x, RTSP, RTP, SRTP, TFTP, HTTP, HTTPS, Syslog, ONVIF
- **Operating temperature:** -30 ˚C to 60 ˚C (-22 ˚F to 140 ˚F)
- **Operating humidity:** 10 to 85 % (not condensing)
- **Permitted temperature range for product transport:** -30 ˚C to 60 ˚C (-22 ˚F to 140 ˚F)
- **Loudspeaker impedance:** 8 Ω
- **Frequency range:**
  - 400 Hz – 7.5 kHz (-10 dB)
  - 275 Hz – 12 kHz (-20 dB)
- **Harmonic distortion:** 0,05 % @ 1 kHz
- **Signal-to-noise ratio:** 91 dB
- **Sound Pressure Level:**
  - 110 dB (for 1 kHz, distance 1 m)
  - 124 dB (SPLmax)
- **Output Power:** 8 W (PoE) / 25 W (24 V)
- **Audiocodecs:** G.711 (PCMA, PCMU), G.722, L16 / 16 kHz

- 400 Hz – 7,5 kHz (-10 dB)
- 275 Hz – 12 kHz (-20 dB)

5. Supplementary Information

Here is what you can find in this section:

- 5.1 Troubleshooting
- 5.2 Directives, Laws and Regulations
- 5.3 General Instructions and Cautions

5.1 Troubleshooting

For the most frequently asked questions refer to **faq.2n.cz**.

5.2 Directives, Laws and Regulations

Europe

2N® SIP Speaker Horn conforms to the following directives and regulations:

Directive 1999/5/EC of the European Parliament and of the Council, of 9 March 1999 - on radio equipment and telecommunications terminal equipment and the mutual recognition of their conformity

Directive 2006/95/EC of the European Parliament and of the Council of 12 December 2006 on the harmonisation of the laws of Member States relating to electrical equipment designed for use within certain voltage limits

Directive 2004/108/EC of the Council of 15 December 2004 on the harmonisation of the laws of Member States relating to electromagnetic compatibility

Commission Regulation (EC) No. 1275/2008, of 17 December 2008, implementing Directive 2005/32/EC of the European Parliament and of the Council with regard to ecodesign requirements for standby and off mode electric power consumption of electrical and electronic household and office equipment

Directive 2011/65/EU of the European Parliament and of the Council of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment

Regulation (EC) No. 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No. 793/93 and Commission Regulation (EC) No. 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC

Directive 2012/19/EC of the European Parliament and of the Council of 4 July 2012 on waste electrical and electronic equipment.

Industry Canada

This Class B digital apparatus complies with Canadian ICES-003. / Cet appareil numérique de la classe B est conforme a la norme NMB-003 du Canada.

FCC

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which 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:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and receiver
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/TV technician for help.

Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

5.3 General Instructions and Cautions

Please read this User Manual carefully before using the product. Follow all instructions and recommendations included herein.

Any use of the product that is in contradiction with the instructions provided herein may result in malfunction, damage or destruction of the product.

The manufacturer shall not be liable and responsible for any damage incurred as a result of a use of the product other than that included herein, namely undue application and disobedience of the recommendations and warnings in contradiction herewith.

Any use or connection of the product other than those included herein shall be considered undue and the manufacturer shall not be liable for any consequences arisen as a result of such misconduct.

Moreover, the manufacturer shall not be liable for any damage or destruction of the product incurred as a result of misplacement, incompetent installation and/or undue operation and use of the product in contradiction herewith.

The manufacturer assumes no responsibility for any malfunction, damage or destruction of the product caused by incompetent replacement of parts or due to the use of reproduction parts or components.

The manufacturer shall not be liable and responsible for any loss or damage incurred as a result of a natural disaster or any other unfavourable natural condition.

The manufacturer shall not be held liable for any damage of the product arising during the shipping thereof.

The manufacturer shall not make any warrant with regard to data loss or damage.

The manufacturer shall not be liable and responsible for any direct or indirect damage incurred as a result of a use of the product in contradiction herewith or a failure of the product due to a use in contradiction herewith.

All applicable legal regulations concerning the product installation and use as well as provisions of technical standards on electric installations have to be obeyed. The manufacturer shall not be liable and responsible for damage or destruction of the product or damage incurred by the consumer in case the product is used and handled contrary to the said regulations and provisions.

The consumer shall, at its own expense, obtain software protection of the product. The manufacturer shall not be held liable and responsible for any damage incurred as a result of the use of deficient or substandard security software.

The consumer shall, without delay, change the access password for the product after installation. The manufacturer shall not be held liable or responsible for any damage incurred by the consumer in connection with the use of the original password.

The manufacturer also assumes no responsibility for additional costs incurred by the consumer as a result of making calls using a line with an increased tariff.

Electric Waste and Used Battery Pack Handling

Do not place used electric devices and battery packs into municipal waste containers. An undue disposal thereof might impair the environment!

Deliver your expired electric appliances and battery packs removed from them to dedicated dumpsites or containers or give them back to the dealer or manufacturer for environmental-friendly disposal. The dealer or manufacturer shall take the product back free of charge and without requiring another purchase. Make sure that the devices to be disposed of are complete.

Do not throw battery packs into fire. Battery packs may not be taken into parts or short-circuited either.

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