

NEGOTIATOR'S COMMUNICATION SYSTEM NCS-31

MANUAL
VERSION 2.1.2 E



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Introduction

NCS-31 is a complete telecommunications system intended for external use.

The system comprises

- ❑ GSM module for cellular telephony
- ❑ DECT module for short-distance digital communication
- ❑ PSTN for traditional wired telephony
- ❑ Recorder based on Compact Flash memory cards (CF)
- ❑ Monitor speaker, twin headsets and numerous external connections
- ❑ Built-in heavy-duty lead-acid battery (4 Ah @ 12 V)

Parts List

NCS-31 is supplied as a complete system, including these parts:

- ✓ 1x NCS-31 system case
- ✓ 1x separate DECT phone SIEMENS C2 +2 rechargeable batteries
- ✓ 1x separate DECT base station SIEMENS C200 + mains adapter
- ✓ 2x sets headset with XLR5 plugs
- ✓ 2x CompactFlash CF 512 MB memory cards
- ✓ 1x USB 2.0 CF reader
- ✓ 1x PSTN phone cable set
- ✓ 1x GSM antenna, MiniWing
- ✓ 1x power cord
- ✓ 1x 12 V DC car adapter cable set / XLR4 for system case powering
- ✓ 1x 12 V DC adapter cable set / DC plug for DECT base station
- ✓ 1x thin case
- ✓ 1x external case for system case
- ✓ 4x tele plug 1/4" <-> 3,5 mm adapters
- ✓ 1x manual

Transportation

A thin case is included for holding most of the accessories. The larger parts (DECT base station and headsets) will go into the external case, adhered to the outside of the system case.

The case will fit inside the system case.

Important! Make sure nothing is in the way when closing the system case lid.



Preparations

Locate a suitable place for the system case, dry and within the temperature range 0 ... +30⁰.

For maximum DECT range the distance to metal parts and other electronic equipment should be no less than 0,5 meter.

Make a choice of power supply:

- 230 V mains power is by far the best choice. It will enable unlimited power-up time as well as charging the internal battery,
- External 12 V DC from a car socket. Use the cable set with an XLR4 plug. The internal battery will not be charged but the system will continue to work when it is discharged.
- Internal battery. It should be fully charged before use of the system case. Estimate approx. 10 – 15 hours of useable time.

When using DECT the DECT base station should be powered either by the 230 V AC adapter or from a 12 V DC car socket by the cable set with a DC plug.

A very suitable location for the base station would be on the car rooftop, preferably covered against moisture. With the car located between the system case and the object a maximum transmission distance up to 500 meters can be achieved.

The POWER switch activates NCS-31.

The switch LIGHT will turn on the light but it will also drain the internal battery much faster.

Two headsets can be used simultaneously, connected to HEADSET A and B.

The knobs next to each socket adjust listening level individually.

Important! If there is a level control on the headset cable this must be in maximum position. If there is a microphone switch on the headset cable it should always be in ON position.

The knob SPEAKER VOLUME will adjust speaker level.

An external signal can be connected to the LINE IN socket and will then be routed to the selected phone line, speaker /headphones and CF recorder.

Local and remote voices from the selected phone line and the CF recorder are present on the LINE OUT sockets.

Important! LINE OUT sockets will not drive headphones.

Pressing MIC MUTE A or B will mute the corresponding microphone while the key is illuminated. Their function is also controlled by the selection of phone line.

Use this function for secrecy purposes.

Menu setup

In neutral mode, i.e. e. power on and no phone line selected, basic setup can be done.

Press the key # to enter the menu.

Each new press on # will advance to next menu page.

Press * to quit.

In page 1 the internal real-time clock may be set. Write year, month, day, hour, minute and second (2 figures each) and press #.

In next page there is a choice of whether or not the local GSM ID should be hidden. Select 1 for show and 0 for hide.

In next page automatic recording can be enabled. Select 1 for enabled and 0 for disabled.

Press # to save and then * to quit menu setup.

The internal real-time clock (RTC) will run even if the system case is powered off. Automatic recording will commence whenever the yellow CALL key is lit. It will stop when the key is dark.

Wired phone line, PSTN

PSTN line connects to the public analogue telephone network by the included cable set. For using a different network plug the cable can be detached and another suitable plug may be used, not included.

The cable connects to the socket PSTN LINE. Your own phone number may be written on the panel by using a graphite pencil.

Press the green key LINE for selecting PSTN LINE.

An incoming call will be announced through the speaker. Answer by pressing the yellow CALL key.

Disconnect by pressing the CALL key once more.

Before establishing an outgoing call the green LINE key should be lit up and CALL should be dark. Write the phone number on the keyboard and press CALL. After 5 seconds NCS-31 will dial the number and open the audio channels.

The indicated number may be cleared by holding * for a few seconds.

GSM

Prior to using the GSM module, the GSM antenna must be connected to the GSM ANTENNA socket. Locate the antenna in a high and free space, away from the system case and metal parts.

Put a SIM card in the cardholder. Open it carefully by pushing the lid back/up.

Slide the SIM card, facing down, into the lid and close it pulling down/forward,

Important! The SIM card must not have a PIN code protection.

Your own phone number may be written on the panel by using a graphite pencil.

Press the green GSM key. It will take a few seconds until the GSM module is locked to a network.

An incoming call will be heard by a sharp tone in the speaker. Answer by pressing the yellow CALL key.

Finish a call by pressing CALL again.

Before attempting to make an outgoing call GSM must be selected and the CALL key should be dark.

Write the phone number and press CALL.

The indicated number may be cleared by holding * for a few seconds.

During the calling process there will be a sharp tone in the speaker.

In standby mode current cell information is displayed as well as the RF signal strength, shown as a bar graph.

DECT

DECT is a wireless, digital system for short-range communication, up to approx. 250 meters from a base station.

NCS-31 includes a SIEMENS GIGASET DECT portable phone, a base station and a DECT module located inside the system case. Communication may be established in a protected mode at distances up to 250 + 250 meters when the base station is located halfway between the portable phone and the system case.

Further extension of the range can be achieved by using a SIEMENS GIGASET Repeater, not included.

Only DECT units registered to the actual base station can communicate through it. The DECT standard enables up to 100,000 different portable phones to co-exist within the same geographical area.

In case a portable phone is damaged a similar portable phone from SIEMENS can easily replace it. The following phone or phone series are compatible with the units used in NCS-31: C2, C200, 1000, 2000, 3000 and 4000.

See the SIEMENS GIGASET C200 manual for information on how to register a new phone to the base station before using it in the NCS-31 system.

In NCS-31 only the internal call feature is used.

The portable phone has re-chargeable batteries: They are charged whenever the phone is placed in the phone holder at the base station and the latter is powered from its 230 V mains adapter. Charging time is approx. 5 hrs.

The standby time can be up to 7 days and talk time can be up to 13 hrs.

Always start by connecting power supply to the base station, Use the 230 V adapter or the supplied 12 V DC adapter cable set / DC plug for DECT base station.

Important! Do not press the key on the base station, unless a new portable unit is to be registered to it.

Press and hold the red key on the portable phone until it powers up. For a moment there will be a brief search for the base station. When the line INT is shown in the LCD display the phone is locked to the base station.

Pressing the green DECT key activates the DECT module in the system case.

The system case display does not give any information on the status of the DECT module other than it is powered up. Beeps in the speaker will give this information.

Call from portable phone to system case

Portable phone	Press INT (upper left key) and then green key or speaker key.
System case	When speaker volume is slightly up you can hear the signal for an incoming call. Answer by pressing CALL.

Call from system case to portable unit

System case	Press CALL.
Portable phone	Press green key or speaker key.

Terminate call

Portable phone	Press red key or wait until remote part terminates the call.
System case	Press CALL key or wait until remote part terminates the call.



External connections

In the system case are a number of sockets for external connections:

- LINE IN is intended for connecting to another source at line level (0,8 Vrms). This source will be routed to both the selected phone and speaker/headset as well as to the CF recorder.
- LINE OUT, 3x, are intended for connecting to external equipment, such as recorder, powered speakers, etc. Signal level can be adjusted up to line level (0,8 Vrms). The signal is a mix of audio from phones, headsets and CF recorder.

Power supply

In the system case are a pair of lead acid batteries, 12 V @ 2,2 Ah each. They are automatically charged whenever 230 V mains power is attached to the system case. The green AC LED will then be lit.

With the included 12 V DC car adapter cable set / XLR4 for system case powering the system can be powered from a car battery. The yellow DC LED will then be lit. Important! There will not be any charging of the internal batteries when the external power is 12 V DC. They should always be re-charged by mains power whenever possible.

The red LOW BAT LED indicates low battery voltage.

Fully charged batteries will power the system case for 10 – 15 hrs. Charge time is minimum 8 hrs for fully discharged batteries. There is no need to manually interrupt the charge process. This is done automatically.

CF Recorder

The recorder is digital and records audio onto a CF memory card, the same kind used in many digital cameras.

Recording format is standard WAV, 16 bits mono @ 8 kHz. CF card sizes 32 MB to 1 GB may be used.

Formatting the CF card

Before using a CF card it must be formatted in a PC.

The formatting must always be FAT (or FAT16) and never FAT32 or NTFS.

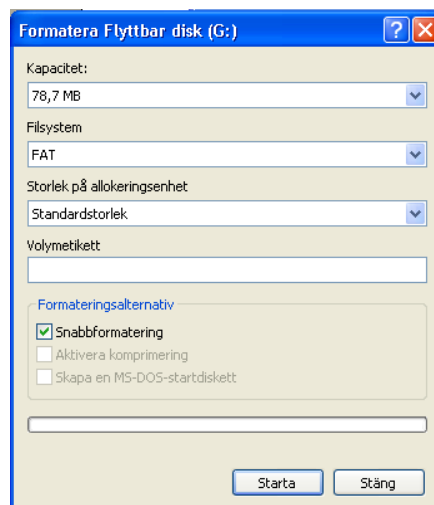
Attach the CF card reader to a free USB socket in a PC running WindowsXP. Older operating systems may be used but they will probably need drivers, located on the accompanying CD. See the CF card reader manual for instructions.

Put the CF card in the card reader.

Open File Explorer; find the CF card at its own drive letter.

Right-click on the disk unit and select Format...

The window shown below will then appear.



At File System, select FAT (never FAT32 or NTFS).

Make sure Volume Label is clear.

Check mark Fast formatting.

Click Start.

When the card has been formatted it is ready to be used in the system case. The CF card must not hold any other files than those generated in the NCS-31 CF recorder.

Put the card in the left slot, with the text side facing the case lid. The second slot may hold a spare card.

When a CF card is seated in the left slot the REC and PLAY keys will be dark. If they do not then it is possibly a bad CF card.

Recording starts when the red REC key is pressed.

If the menu option Auto REC was selected recording will start whenever the yellow CALL key is lit and it will stop when it goes dark.

Pressing STOP will also end the recording and store the file on the CF card.

The filename is automatically generated and has the form M000.WAV, where 000 may be a number from 000 to 511. A maximum of 512 files may thus be recorded.

If a recording is longer than approx. five minutes it will be partially saved for safety reasons; this will reduce the loss of recorded audio to five minutes or less, in case an error would occur.

Playback starts when PLAY is pressed. The current file number is shown in the display along with the start date/time for the file.

It is possible to scan forward and backward among stored files using << or >>. Press and hold any of these keys for a continuous scan.

During playback speed-play can be selected by holding << or >>. This will increase playback speed by approx. 3 times.

Audio quality is higher when playing back the recorded files in a PC or Mac.

The files cannot be erased in NCS-31.

File handling

The CF card can only be used for recording of audio files in the system case and playback in the system case or a PC/Mac. No kind of renaming, adding or deleting files is allowed. The CF card must always be formatted after any such activity.

The normal procedure is:

- Record the phone calls to CF card in the system case.
- Move the CF card to the CF reader (USB).
- Double-click any file for immediate playback in Windows Media Player or any similar software.
- Copy desired files from CF card to hard disk for further editing.
- Format the CF card in order to prepare it for new recordings.

FAQ (Frequently Asked Questions)

Symptom	Possible cause	Action
The system case will not power up.	1. Empty battery. 2. Internal error.	1. Connect mains supply for at least 6 hrs re-charging. 2. Call MARENIUS for service information.
Audible noise during GSM calls.	Antenna is too close to the case.	Move the antenna away.
GSM cannot read the SIM card.	PIN code protection is active.	Only use SIM cards without PIN code protection.
GSM can not lock to a network	Badly located antenna.	Locate the antenna high and free from metal parts.
Minor audio noise during DECT calls.	The DECT module and its antenna are located inside the system case.	None.
DECT does not work.	1. The portable phones display indicates if the base station is not found. 2. The portable phone will lock to the base station but the DECT module will not...	1a. Make sure the base station is powered. 1b. Repeat registering to the base station. 2a. Move the base station closer to the system case. 2b. Call MARENIUS for service information.
None or weak audio in headset.	The level control on the headset cable is not at maximum level.	Adjust to maximum level.
The system does not respond to key press.	The main processor may have had interference.	Power off and then power on.
CF Recorder does not record.	CF card is not formatted for FAT (16).	Format the CF card.
LOW BAT indication although the system case is powered from external 12 V DC.	External DC is lower than 12 V.	Choose mains power, if possible.

Service Form

NCS-31 system case and its accessories are covered by a one-year guarantee for manufacturing defects. Use a copy of this form whenever need for repair exist.

Equipment for repair should always be sent to the following address, with paid freight cost):

MARENIUS ELEKTRONIKUTVECKLING AB

HÄLLEFLUNDREGATAN 16

SE-426 58 VÄSTRA FRÖLUNDA

SWEDEN

Make sure the goods will stand the transportation without being damaged.

We will not cover any damages caused by poor shipping.

Fill in applicable information below.

NAME	
REFERENCE	
TELEPHONE	
SHIPPING ADDRESS	

NCS-31 SERIAL NUMBER	
OBJECT FOR REPAIR	
DESCRIPTION OF THE DAMAGE	
CAUSE (MARENIUS NOTES)	
ACTION (MARENIUS NOTES)	
GUARANTEE (MARENIUS NOTES)	