



Speech  
Technology  
Center

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# CATALOGUE

AUDIO/VIDEO RECORDING  
AND SPEECH PROCESSING SOLUTIONS

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# About the company

Speech Technology Center (STC) is an international leader in speech technology and multimodal biometrics. It has over 20 years of research, development and implementation experience in Russia and internationally.

STC is a leading global provider of innovative, high quality systems in recording, audio and video processing and analysis, speech synthesis and recognition, and real-time, high-accuracy voice and facial biometrics solutions. STC innovations are used in both public and commercial sectors, from small expert laboratories, to large, distributed contact centers, to nation-wide security systems.

STC is ISO-9001: 2008 certified.



# MULTI-CHANNEL CALL RECORDING SYSTEMS

STC's call recording solutions were first introduced to the telecom market in 1997 and are now being implemented all over the world. Multi-channel call recording systems allow organizations to capture, search, play back and share recorded internal and external interactions across a range of communication channels (analog, TDM, VoIP, microphones etc.), with the added capacity of analyzing customer loyalty, monitoring employee performance, detecting fraudulent activity, and much more. The advanced technology behind STC's call recording solutions is the culmination of the work of dozens of highly skilled and experienced developers, engineers and analytic technicians.



## Smart Logger II

Multi-Channel Call  
Recording System  
STC-L303

### Universal Architecture, Different Configurations for Various Tasks

Smart Logger II solves practical call recording tasks in a wide range of areas, from public safety, to security, to business transactions, and is deployable across domains, from industrial, transport, to energy enterprises.

It is a flexible platform that can be scaled up from a small, compact system with several channels to a distributed system with hundreds of channels. The software runs on MS Windows OS. The system is easily implemented and is regularly verified for compliance with the latest telecommunication solutions.

## Smallogger II

Stand-Alone Audioserver

### Stand-Alone Audioserver with Web Interface

Smallogger II versions include miniature devices and 19''/1U rack audioservers with built-in HDD.

Audio data recorded using Smallogger II is accessed using a web browser – no additional software is required. Data is transmitted securely using HTTPS protocol.

Smallogger II is the ideal solution for audio recording and monitoring at remote or distributed objects.



TDM recording



CTI support



Fax decoding



VoIP recording



Speech analytics



Transcriber



Desktop analytics



Quality monitoring



CD/DVD data archiving

# Smart Logger II

STC-L303



## Description

Smart Logger II supports a wide range of capabilities for call recording, search, playback and analysis, and enables operator evaluation and customer satisfaction measurement.

## Application

- Call centers (businesses, public organizations): record conversations for safety reasons (e.g. threats, terrorist calls), customer satisfaction issues, to monitor staff performance
- Call centers of financial institutions (stock trading, banking): record verbal communications for financial security purposes
- Organizational dispatch centers (power, telephone, oil, water, gas suppliers): record internal and external communications for subsequent control and investigation
- Police and other law enforcement agencies: lawful interception and monitoring of conversations from mobile or fixed monitoring centers
- Emergency services (fire, ambulance, rescue): record incoming calls to ensure efficient follow up



## Crisis hotlines

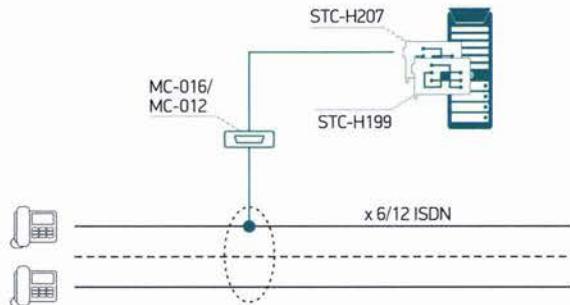
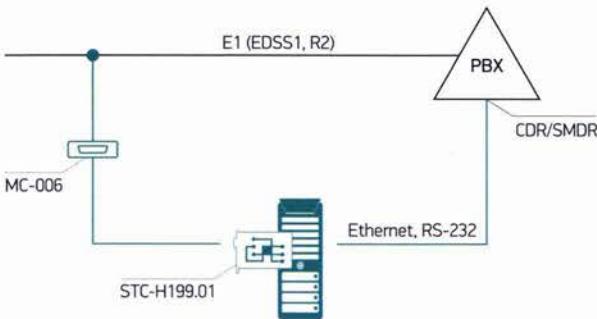
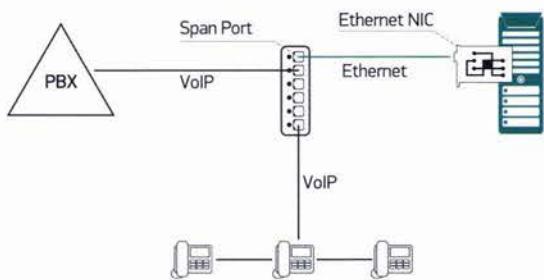
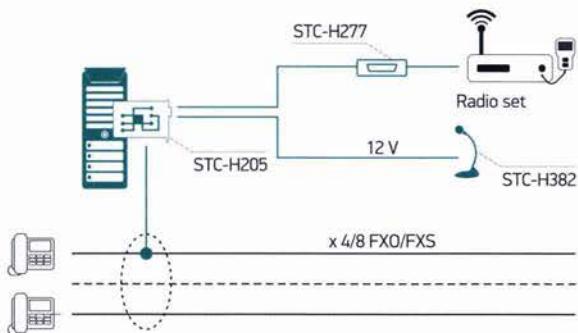
- Insurance companies, and many more

## Main Benefits

- High quality audio recordings can be used for identification purposes
- Unique speech technologies: top quality noise reduction filters and emotion detection analytics
- Flexible platform: universal architecture, different configurations for various tasks
- Robust solution: automatic work restoration, 24/7/365 readiness
- Seamless integration: CTI, CDR/SMDR (SIP, H.323, Avaya, Cisco, Nortel, etc.) support
- Professional, multi-language technical support

# Smart Logger II

STC-L303



## Features

- Total call recordings
- Playback with noise reduction, automatic gain control, skipping pauses
- Analysis and scorecards tools
- Screen recording
- Data archiving (CD, DVD, external repositories)
- Records export and playback by usual media player
- System monitoring
- Discretionary access control and log user activities
- Sampling frequency: 8,11.025,16 or 22,050 kHz
- PCM, G.711 (A-law, μ-law) codecs
- Registration of phone call related information

- Real-time audio channel monitoring

- Search grids
- Authorized-only access

## Signal Sources

- Analog and digital phone lines
- E1 trunks (ISDN PRI)
- IP telephony
- Microphones (5, 12, 60 V)
- Radio sets
- Analog line outputs

# Smart Logger II

STC-L303

## Interface Boards and Input Devices

Smart Logger II has a wide variety of interface boards and devices for connecting the system to different signal sources.

### Interface Boards

Version	Signal Sources	Interface	Daughterboards
STC-H205/4	4 analog signal sources 16-bit ADC, S/N minimum 80 dB	PCI	STC-H217/STC-H248 for auto hook-on
STC-H205	8 analog signal sources 16-bit ADC, S/N minimum 80 dB	PCI	STC-H217/STC-H248 for auto hook-on
STC-H433	8 or 16 analog signal sources 24-bit ADC, S/N minimum 85 dB	PCI Express x1	STC-H465 – extention to 16 signal sources
STC-H199	6 or 12 digital subscriber lines	PCI	STC-H207 – extension to 12 digital lines STC-H456 – AM/FM 8 channel receiver
STC-H199.01	E1 trunk	PCI	–



### USB Device

Version	Signal Sources	Size	Comments
STC-H219	4 analog signal sources 16-bit ADC, S/N minimum 80 dB	130x100x30 mm	–
STC-H219D	–	–	60V phantom power for microphones



### Small Sized Ethernet Input Device

Version	Signal Sources	Size
STC-H356	8 analog signal sources 16-bit ADC, S/N minimum 76 dB	–
STC-H356.1	2 digital subscriber lines 8 analog signal sources	–
STC-H345	2 digital subscriber lines	170x108x32 mm
STC-H354	8 digital subscriber lines	–
STC-H357	E1 trunk	–



### 19" Rack Ethernet Input Device

#### Capabilities:

- Analog signal sources: 8/16/24/32
- Digital subscriber lines: 8/16/24/32
- E1 trunks: 1/2/3/4



## Optional Software

Version	Item	Description	Comments
STC-S352	File Server	Centralized database service	Necessary module for distributed networks. Collects records in one database and satisfies robustness requirements
STC-S379	SMDR Analyzer	RS-232 and Ethernet connection of recording system to PBX billing ports	Registers subscribers' internal phone numbers while recording through external analog lines and E1 trunks
STC-S392	CTI Analyzer	Connection of recording system to CTI PBX interfaces, communication platforms and dispatch centers	Registers detailed information on phone calls and status of subscribers, dispatchers and call center operators
STC-S458	Video Recording Service	PC screen registration service	Synchronous PC monitor video recording and audio recording of phone calls
STC-S437	SIP Source	SIP telephony registration	Phone call registration in corporate networks with SIP telephony and SIP trunks by parsing IP packets
STC-S367	VoIP Source	Proprietary IP telephony registration	Phone call registration in corporate networks with Avaya, Nortel, Cisco (etc.) protocols by parsing IP packets
STC-S472	Avaya DMCC Source	Avaya telephony registration with CTI-integration	Phone call registration in Avaya networks by using Service Observing, Single Step Conferencing and Multiple Registration
STC-S394	Soft Button	Records call center operators	Call recording on demand; mode controlled by the operator
STC-S370	Fax Reader	Fax decoding	Decodes faxes into image files for viewing and printing
STC-S438	Word Transcriber	Audio-to-text transcription	Plug-in enables text transcription in MS Word with simultaneous audio file playback control. Text and audio can be automatically synced during transcription
STC-S439	Remote Panel	Audiovisual system monitoring	Recording channel status can be monitored with software scalable panel. Ideal for installation at dispatch centers and laboratory/high-tech facilities
STC-S391	SMS receiver	SMS Receiver	SMS registration software module received by GSM terminal connected to the recording system
STC-S509	Notifier	Technical monitoring of recording system	Software module enables extended monitoring of recording system operational status. Alerts can be transferred via SMS, e-mail or SNMP

# Smart Logger II

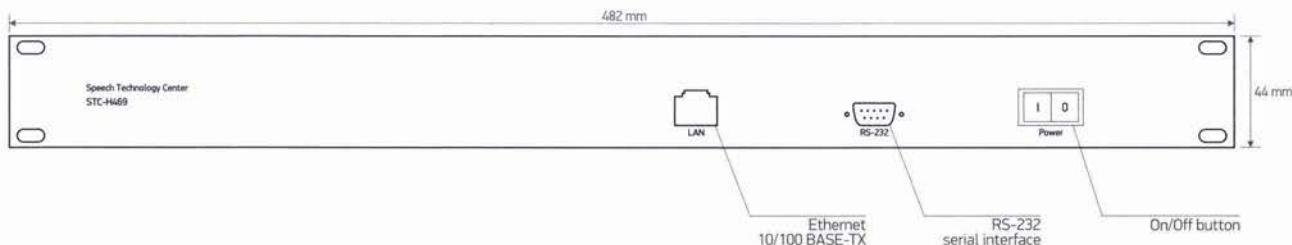
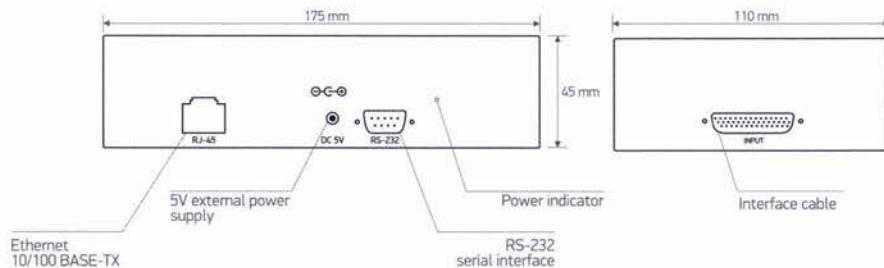
STC-L303

## Additional Equipment

Version	Item	Application	Image
STC-H277	Mixer	Connects to duplex radio recording systems and other signal sources with four-wire interfaces. Size: 60x60x25 mm	
STC-H300	Switch	Software switching control of signal sources and recording channels. Switching control through RS-232 interface. Switching schemes may be from 121x1 to 16x8 Size: 190x110x105 mm	
STC-H382	Microphone with preamplifier	Controls acoustic conditions in recording environments. Two-wire 12V power supply through interface boards or I/O recording devices	
STC-H468	Lightning guard	Protects against too-high voltage and current surges	

# Smallogger II

Stand-Alone Audioservers



## Application

Smallogger II is the ideal solution for audio recording and monitoring at remote or distributed objects. The device requires no special software. Smallogger II works as a Linux-server connected to the TCP/IP network. Authorized users can access information through a web browser installed on any PC. Data is transmitted securely using HTTPS protocol.

## Signal Sources

- Microphones (12 V)
- Radio sets
- Analog line outputs
- Analog telephone lines FXO/FXS
- Two-wire, four-wire digital subscriber lines, S/T/U/Up0 interfaces (ISDN BRI, proprietary PBX digital signaling)
- E1 trunks (ISDN PRI, R2)



The screenshot displays two main sections of the Smallogger II web interface.

**Top Section (Security Settings):**

- Setting groups:** Network, Firmware, Date and time, Device.
- LIMIT INCOMING TRAFFIC:** IP-filtering limit is disabled, with a list of allowed IP addresses containing "192.168.3.20". Buttons for "Delete" and "Add an address" are present.
- IP-FILTERING:** IP-filtering is disabled.
- MAC FILTERING:** MAC-filtering is disabled, with a list of allowed MAC addresses.
- MANAGE FTP-ACCESS:** Access enabled is set to "No".

**Bottom Section (Database Log Viewer):**

- Records modified:** 3 (March 2012).
- Data selection:** March, 2012.
- Channels control:** Shows a grid of recorded audio clips for various channels (D-01 to D-08) on March 19, 2012, at 14:46:41. Channel 3 is highlighted in yellow.
- Logs:** A detailed log table for channel 4 (D-04) on March 19, 2012, from 14:46:41 to 14:46:46. It lists 20 records, each with a duration of 0:00:30 and subscriber IDs ranging from 988123255848 to 988123255849. Action icons like play, stop, and delete are shown for each record.
- Buttons:** Refresh, Import, Export, Selected: 2, Delete, Important.
- Information:** Shows 0:00:06/0:00:30, Records per page: 200, and © Speech Technology Center, 2012.

## Features

- Audio recording
- Sampling frequency: 8, 11.025, 16 or 22.050 kHz
- PCM, G.711 (A-law, μ-law) codecs
- Registers phone call related information
- Real-time audio channel monitoring
- Search grids
- Authorized-only access
- Secure data transfer via HTTPS protocol

- Logs user activities
- Protection against password guessing and against DDoS attacks
- MAC/IP address white lists
- Monitoring tools for several audio servers
- Remote software upgrade
- FTP-server operation mode
- 500 GB HDD built-in

# Smallogger II

Stand-Alone Audioservers

The Smallogger II series includes a miniature version and a standard-frame (19'') rack device

Version	Signal Sources	Size	Comments
STC-H413	8 analog signal sources 16-bit ADC, S/N minimum 76 dB	Standalone miniature audio servers 175x110x45 mm	5V external adapter power supply Current consumption is 700mA
STC-H413.1	2 digital subscriber lines 8 analog signal sources 16-bit ADC, S/N minimum 76 dB		
STC-H477	2 digital subscriber lines		
STC-H478	8 digital subscriber lines		
STC-H479	E1 trunk		
STC-H469	8 analog signal sources 16-bit ADC, S/N minimum 76 dB	19''/1U rack audio server	220 V power supply Surge protection
STC-H560	16 analog signal sources 16-bit ADC, S/N minimum 76 dB		
STC-H545	24 analog signal sources 16-bit ADC, S/N minimum 76 dB		
STC-H469.01	2 digital subscriber lines 8 analog signal sources 16-bit ADC, S/N minimum 76 dB		
STC-H513	8 digital subscriber lines		
STC-H543	6 digital subscriber lines 24 analog signal sources 16-bit ADC, S/N minimum 76 dB		
STC-H559	16 digital subscriber lines		
STC-H544	24 digital subscriber lines		
STC-H553	E1 trunk		
STC-H558	2 E1 trunks		
STC-H589	3 E1 trunks		

1U rack audio server can be customized for the requested channel capacity and signal sources.

The following options available: 8/16/24/32 analog signal sources, 2/8/16/24/32 digital subscriber lines, 1/2/3/4 E1 trunks.

# EMERGENCY NOTIFICATION

Transferring information fast and at the right time is important in every organization. Getting information to customers and staff in emergency situations is crucial for safety, especially for companies and agencies that serve a wider public.

The Smart Ringer automatic notification system carries out a wide range of information transfer tasks through various communication channels. The system is distinctive in being simple to install, easy to operate and multifunctional.

Smart Ringer has been successfully deployed in law enforcement and military agencies, in commercial and industrial organizations, and by government at local and regional levels.



# Smart Ringer

STC-S520.1



## Application:

Automatic 24/7 subscriber notification through IP channels and E1 trunks with time zone consideration

## Objectives:

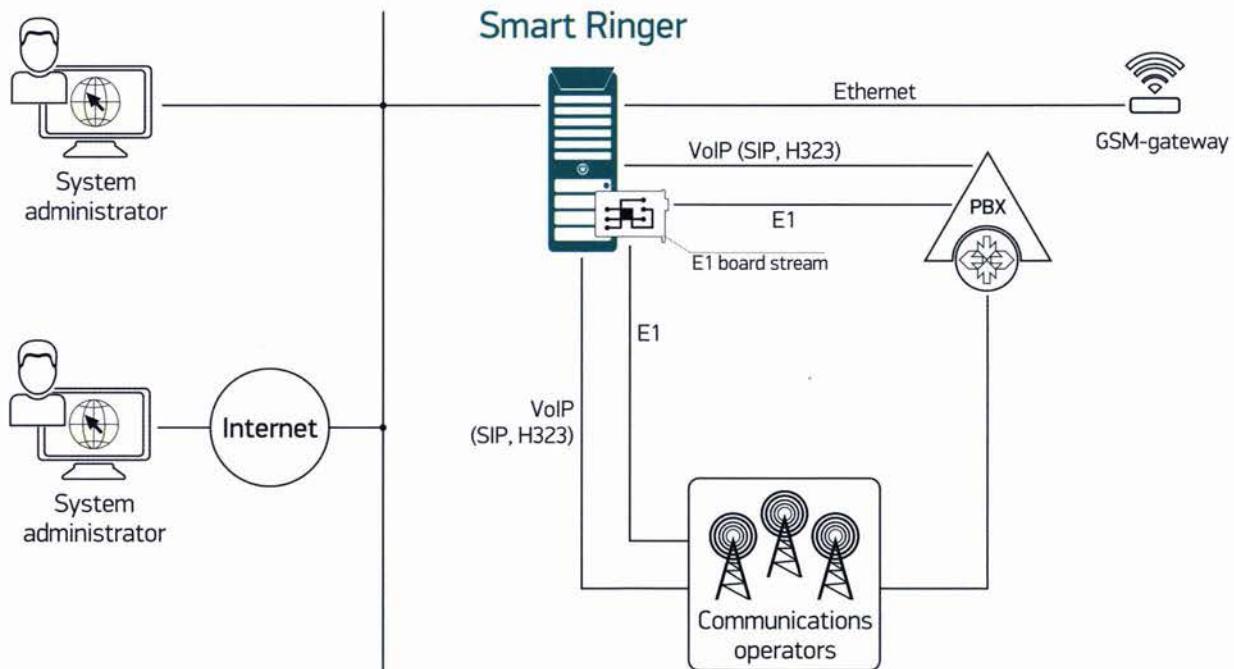
- advertise goods and services, conduct marketing surveys
- connect with database subscribers automatically and transfer calls to contact center agents
- notify employees and customers about upcoming events, emergency situations
- inform subscribers about service interruptions (Internet service providers, water utilities, public utilities)

## Advantages:

- the system is controlled remotely using a web-browser and any OS
- tasks are created automatically based on templates
- notification initiates automatically
- tasks can be personalized to individual subscribers
- make up to 100 simultaneous calls
- works on Linux CentOS server

# Smart Ringer

STC-S520.1

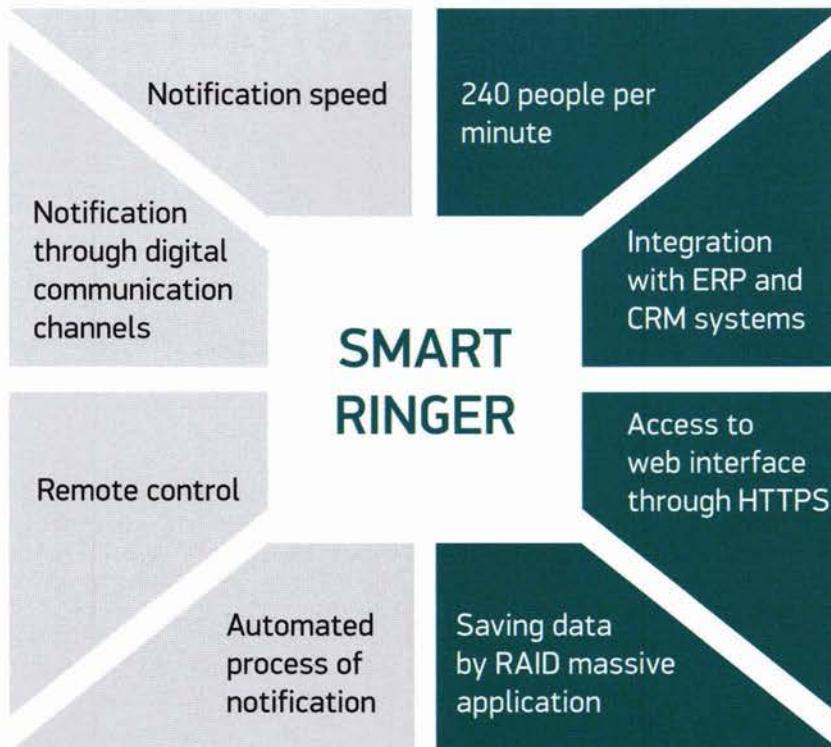


## Functionality:

- subscribers notification via VoIP (SIP, H.323), and E1/T1 trunks
- dynamic load balancing by telephone channels, depending on the task
- unlimited number of notification tasks
- creating tasks manually or automatically based on the template
- flexible notification settings in the task template (schedule, life time, time zones)
- sorting tasks by state and date of creation
- adding lists of subscribers from spreadsheet files (.csv) to the notification templates
- detailed reports with flexible filters of notification results
- creating voice messages using microphone or imported audio file
- request for re-listening the messages
- request for the call transfer to contact center agent on the completion of the notification

- exporting and printing reports in a spreadsheet files (.csv)
- audio recording of subscribers notification
- real time analysis of the system's work flow
- the criterion of a successful warning: on-time preview the recording, a marker present in the message, the audio call has been answered
- importing databases into the system with spreadsheet files (.csv)
- connecting the system directly to the network provider or joint operation with PBX Cisco, Avaya, Samsung, etc.

## TASKS



## RESULTS

### Smart Ringer Applications

#### Notification of personnel: security and emergency services.

In the event of an emergency, Smart Ringer immediately informs a circle of responsible persons to take necessary measures. The system sends the notifications to stationary or mobile phones.

Subscribers who have received messages can confirm receipt by voice command, for example, by saying his/her name. The system records all notification responses.

#### Automatic outgoing calls: contact centers.

Smart Ringer can be used in contact centers as a separate module for automatic outgoing calls. Once the contacts database is loaded manually or automatically (CRM integrated database systems) and the call script is configured, the system is ready for use.

When subscribers answer incoming calls, Smart Ringer provides them with the desired information. If subscribers request further information, calls are transferred to contact center agents for follow-up.

Smart Ringer can manage a large number of calls in a short period of time (cold calls), while transferring only interested, potential customers to call centers (warm calls).

- Optimize call center workforce
- Reduce operating costs
- Agents only answer important calls

#### Subscriber notification: telecommunication and Internet service providers

- Inform subscribers about new services and promotions
- Alert subscribers to service interruptions or emergencies

Smart Ringer can be usefully integrated with an organization's information system. It makes calls automatically and provides subscribers with important or urgent information recorded using a microphone (or from audio files). After notification has been sent, the system creates a report that is then sent back to the organization.

# PROFESSIONAL VIDEO AND AUDIO RECORDERS

Developing professional voice recorders we tend to create unique devices for high-quality digital audio recording in indoor and outdoor adverse acoustic conditions. Each device in our product line is distinguished by highest technical specifications and extended functionality.

Our voice recorders traditionally have an impact-resistant metal casing and its ergonomics is highly competitive with the best examples of mobile sound recording equipment.

Most of security experts will highly appreciate the data security options, which help to avoid unauthorized listening and modification.



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## Gnome 7.0

Digital Pocket Voice Recorder  
STC-H476

### Advanced and User-friendly

The newest voice-recorder in the product range, with all Gnome advantages combined. LCD, built-in loudspeaker, external memory cards and data protection make this device the perfect tool for security experts, journalists and business people.

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## Gnome-P

Compact Voice Stereo Recorder  
STC-H368

### Convenient and Reliable

Optimal balance in terms of size, quality and functionality, Gnome-P is voice activated, secure, has a durable metal case and is resistant to interference from electromagnetic radiation. The perfect device for covert recording in special operations.

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## Gnome-Nano

Ultra Compact Recorder  
STC-H422

### Ultra Compact and Efficient

The ultra compact recorder is designed for high quality digital audio recording in suboptimal conditions in indoor and outdoor environments. One of few recorders providing continuous, high quality, mono and stereo recording without compression using built-in or (1-2) external microphones.

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## Gnome-2M

Professional Compact  
Digital Recorder  
STC-H203M

### Practical and Functional

Designed to achieve top performance in noisy environments. Equipped with two high quality internal microphones or small external microphones. Wide functionality with multiple settings via an easy-to-use interface: noise suppression, sound stretcher, quick search of speech fragments in long recordings.

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## AVIDIUS mobile

Digital Video/Audio Recorder  
STC-H383

### Multi-Functional and High Quality

A top solution for experts conducting covert audio and video surveillance. Built-in LCD enables camera installation control before investigation. Sensitive microphones provide high quality recordings. JPEG2000 video codec guarantees sharp, reliable frame-by-frame capture.

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Digital signature



Protection against unauthorized listening



PIN-code access protection



No interference from electromagnetic radiation



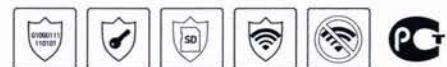
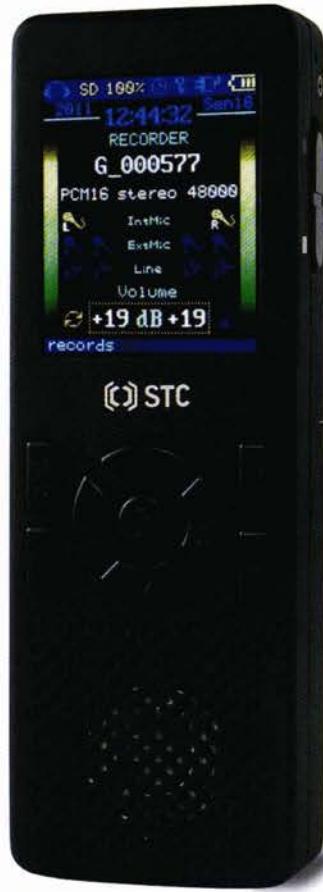
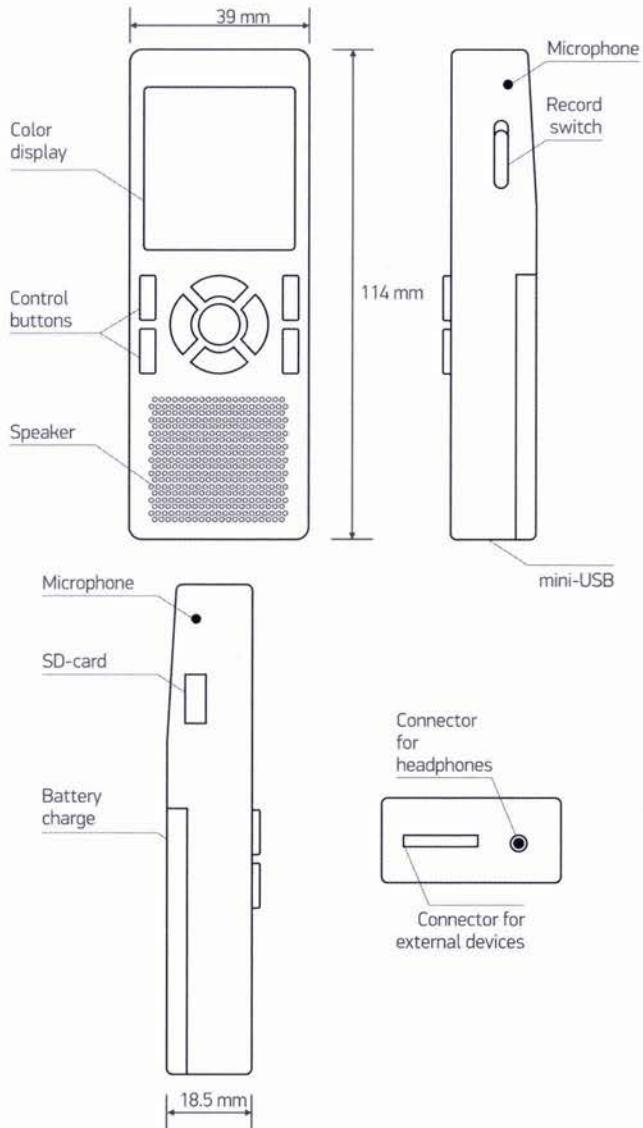
SD card protection



Absence of side electromagnetic radiation

# Gnome 7.0

STC-H476

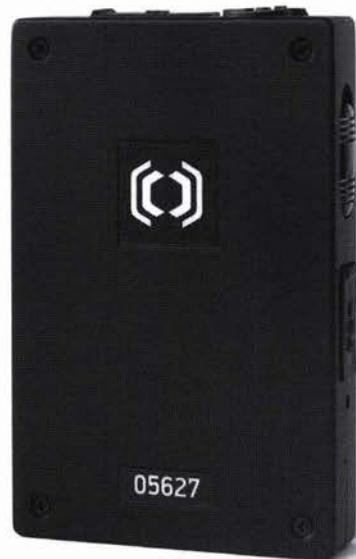
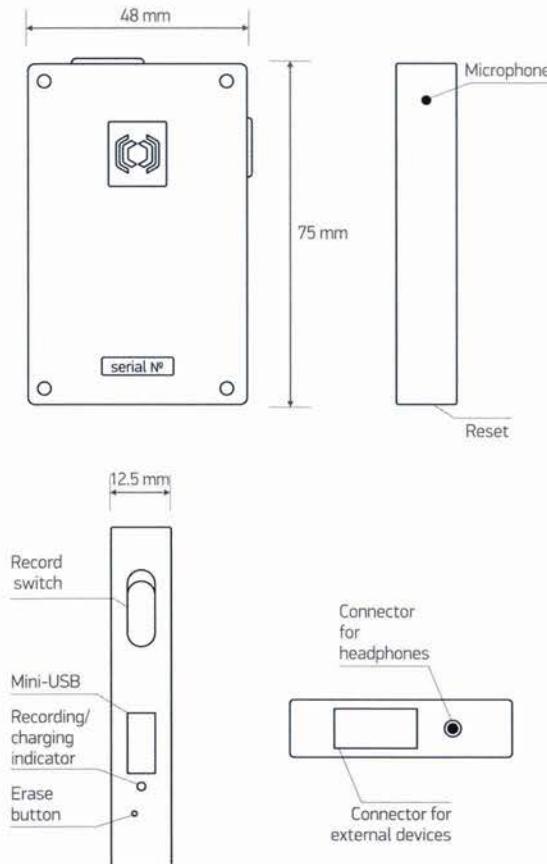


- 4GB built-in memory; optional 32 GB SD-card
- Power supply: 2 "AAA" batteries

- 2 recording formats: PCM (without compression) and A-law compression
- Recording time (maximums):
  - 2 hours with PCM16, 96 kHz, stereo, 4GB
  - 140 hours with 2x compression, 8 kHz, mono, 4GB

# Gnome-P

STC-H368



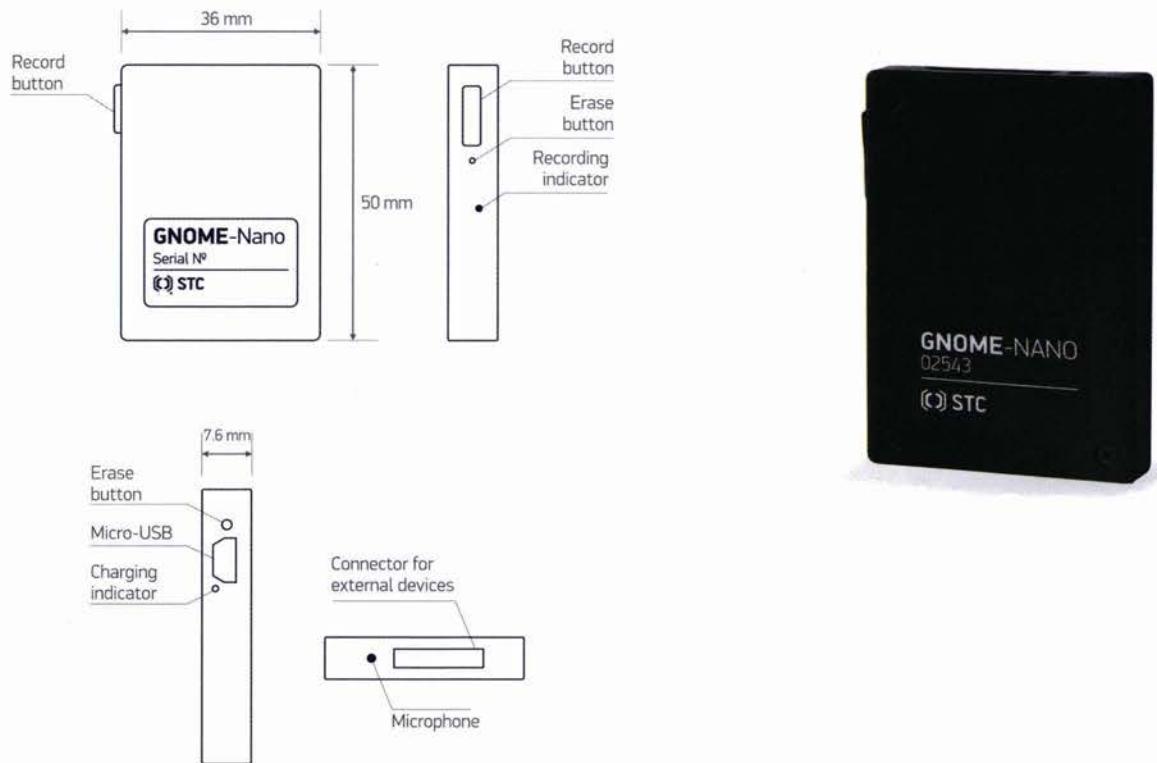
Security Benchmark Award and 1st place diploma,  
Security and Safety International Forum  
(St. Petersburg, Russia)

- 8GB built-in memory
- Power supply: Li-Ion battery
- Recording time (maximums):  
35 hours with PCM16, 16 kHz, stereo  
280 hours with 2x compression, 8 kHz, mono



# Gnome-Nano

STC-H422



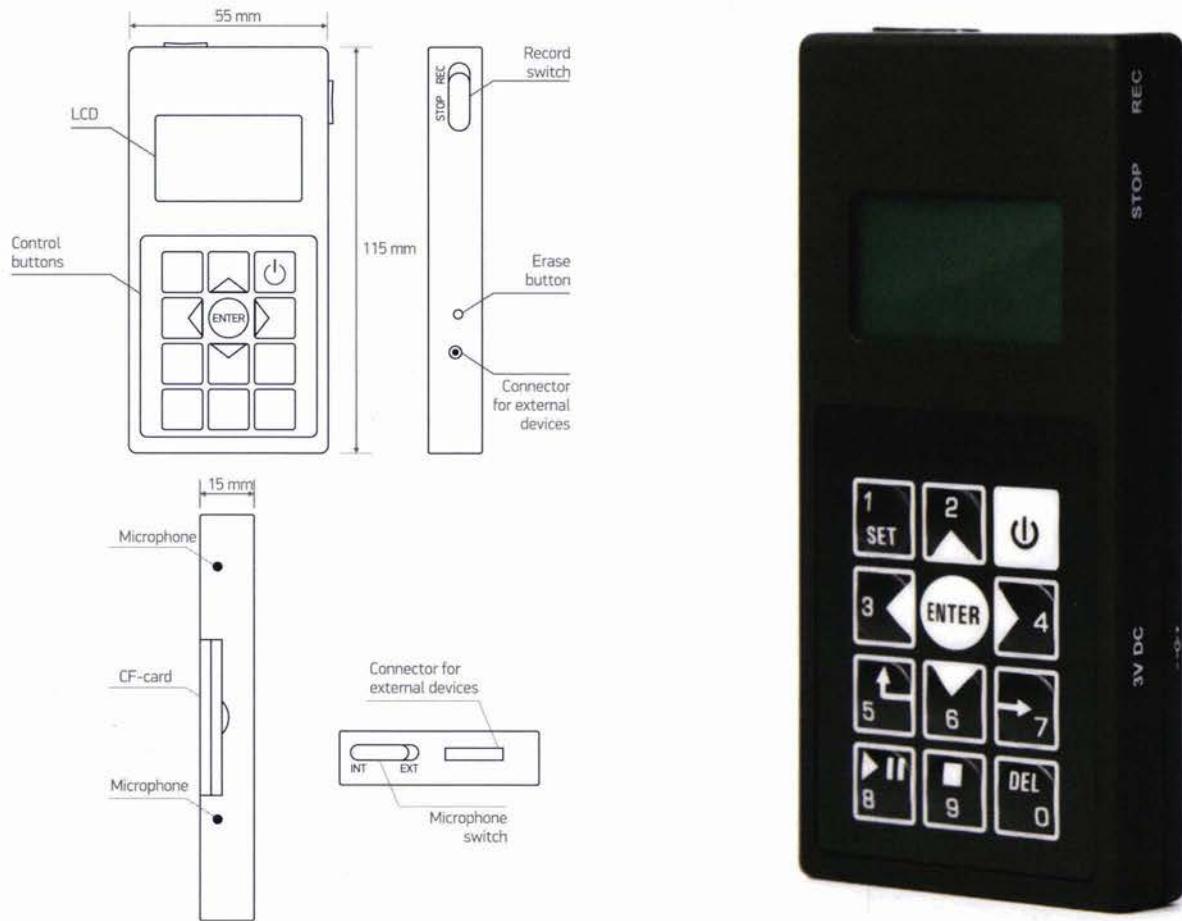
Guarantee of Quality and Safety medal,  
Interpolitex International Forum  
(Moscow, Russia)

- 2GB built-in memory
- Built-in battery rechargeable from power supply (AC/DC 220V/50Hz) or computer USB
- Power supply: Li-Ion battery
- Recording time (maximums):
  - 8.5 hours with PCM16, 16 kHz, stereo
  - 70 hours with 2x compression, 8kHz, mono



# Gnome-2M

STC-H203M



Guarantee of Quality and Safety  
medal, Interpolitex International Forum  
(Moscow, Russia)

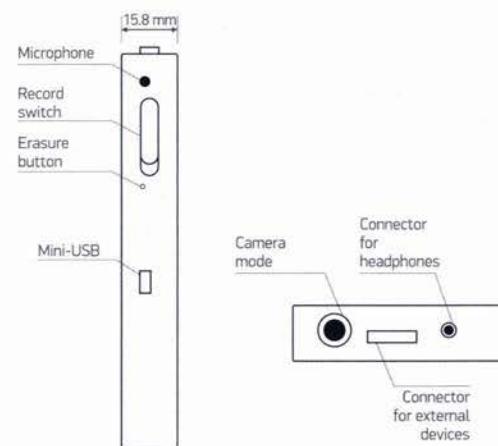
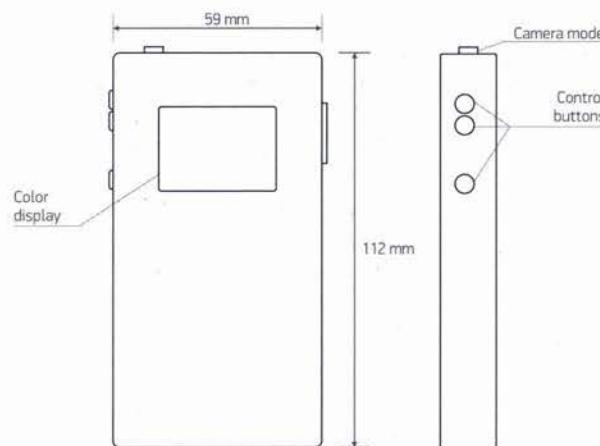


1st place medal, Security  
Technologies International Forum  
(Moscow, Russia)

- Flash card (CF I – up to 32 GB)
- Built-in battery rechargeable from power supply (AC/DC 220V/50Hz) or computer USB
- Power supply: 2 "AAA" batteries
- Recording time (maximums):
  - 17.5 hours with PCM16, 16 kHz, stereo, 4GB
  - 140 hours with 2x compression, 8kHz, mono

# AVIDIUS mobile

STC-H383



- 12 GB built-in memory
- Resolution:
  - Video: 720x576/25 frames per second
  - Audio: 16 bit, stereo
- Video compression algorithm: JPEG2000
- High quality video and audio: resolution 720x576/25 frames per second, audio - 16 bit, stereo
- 3-5 hours – audio
- 1.2-3 hours – video recording

- Activation:
  - Manual switch
  - Timer (5 types)
  - Voice
- Data transfer from device to computer through USB
- Direct-current power supply extends device operation time
- Built-in battery rechargeable from power supply (110-220 V)
- Supports all analog camera types
- Camera powered by video recorder

## Technical Characteristics

	Gnome Nano	Gnome P	Gnome 2M	Gnome 7.0	AVIDIUS mobile
Typical application	Convert recording	Extended Convert Recording	Audio recording	Audio recording	Audio and video recording
Size	50x36x7.6 mm 1.85x1.34x0.23 inches	75x48x12.5 mm 2.87x1.85x0.5 inches	115x55x15 mm 4.52x2.16x0.6 inches	114x39x19 mm 4.48x1.3x0.46 inches	112x59x15.8 mm 4.40x2.32x0.62 inches
Weight	30 g 1 oz	70 g 2.4 oz	130 g 4.6 oz	125 g 4.5 oz	180 g 6.3 oz
Settings available via	Gnome Manager software	Gnome Manager software	Gnome 2M Manager software	Gnome 7.0 Manager software	AV Manager software
Listening via	PC (last recording can be played back from the recorder)	PC (last recording can be played back from the recorder)	From the recorder or PC	From the recorder or PC	From the recorder or PC
Power supply	Li-Ion battery	Li-Ion battery	2 "AAA" batteries	2 "AAA" batteries	Li-Ion battery
Memory	(9 hours) Built-in memory (2 GB)	(30 hours) Built-in memory (8 GB)	(12 hours) Flash card (CF I – up to 32 GB)	Built-in memory (4 GB) (micro SD up to 32 GB)	Built-in memory (1.5 hours) (12 GB)
Sampling rate	8, 16 kHz	8, 16 kHz	6, 8, 10, 16, 32, 48 kHz	8,11,025,16,22,05,32, 44,1,48,96 kHz	8, 16 kHz
Activation	Manual switch Timer (5 types) Voice	Manual switch Timer (5 types) Voice	Manual switch Timer (5 types) Voice	Manual switch Timer (5 types) Voice	Manual switch Timer (5 types) Voice
Video standard	–	–	–		PAL, NTSC
Picture resolution			–		720x576
Video compression algorithm	–	–	–		JPEG2000
Frame rate	–	–	–		PAL - 1...25 fps NTSC - 1...30 fps
Video bit rate	–	–	–		1...20 Mbit/sec
Approximate maximum recording time	8.5 hours with PCM16, 16kHz, stereo  280 hours with 2x compression, mono	335 hours with PCM16, 16kHz, stereo  140 hours with 2x compression, mono	17.5 hours with PCM16/24, 16kHz, stereo, 4GB  84 hours with 2x compression, mono	11.5 hours with PCM16/24, 16kHz, stereo, 4GB  84 hours with 2x compression, mono	–
Min/max operating temperature	-5°C to 40°C 23°F to 104°F	-5°C to 40°C 23°F to 104°F	-5°C to 40°C 23°F to 104°F	-5°C to 40°C 23°F to 104°F	-5°C to 40°C 23°F to 104°F
Features	Digital signature PIN-code Noise suppression	Digital signature PIN-code Noise suppression	Digital signature PIN-code Noise suppression	Digital signature PIN-code Noise suppression	Digital signature PIN-code Noise suppression

\* With Duracell Plus or Ultra batteries

\*\*With Energizer Lithium batteries

# NOISE SUPPRESSION AND SPEECH ENHANCEMENT SYSTEMS

In high-stress situations, such as accidents and criminal investigations, it is important for speech to be clear and easily understandable in order to secure vital information.

In today's law enforcement, military and national security operations, overt and covert sound recordings of speech communications can be crucial in investigations and intelligence operations.

Collected recordings may be the only evidence of security threat or criminal act and may become key elements during case analysis or subsequent court trial. The need for powerful speech enhancement, sound filtering, noise cancellation and audio processing tools is critical for audio operators and experts worldwide.

The ANF II, Denoiser Box and Sound Cleaner uniquely combine state of the art noise filtering algorithms and handle the toughest speech enhancement tasks, including enhancement in real-time.

STC's noise suppression algorithms produce professional results while being intuitive and easy to use. Their unique ability to adapt to different noise types means users require no special expertise in digital sound processing.



## ANF II

Portable Device for Recording and Noise Suppression

STC-H474

### Portable and Functional

Professional hardware for operational use and expert analysis of recorded audio files. Allows real-time audio filtering and data recording to the flash card. The device can be controlled remotely via web page, including settings adjustments. ANF II was designed to be intuitive and easy to use and meets the highest standards in noise suppression.

## Denoiser Box

Ultra Compact Noise Suppression Device

STC-L254

### Maximal efficiency – minimal size

Ultra-compact, easy to use and effective in broadband filtering – these are the main features of Denoiser Box. The noise suppression is easily controlled by turning the knob on the front panel. It is strongly recommended to filter an audio signal via Denoiser Box before recording and processing to reach. The most efficient results

## Sound Cleaner

Noise Suppression Software  
STC-L172

### Effective and Easy to use

State-of-the-art noise suppression and speech enhancement software that uniquely combines all up-to-date noise filtering algorithms and speech enhancement tools in one product.

Through the filtering workflow, each filter can be easily activated and combined with the others so that all the changes in the audio could be intelligibly heard on-the-fly



Recording



Inverse filter



De-clicker



Real-time processing



Broadband filter



Dynamic processing



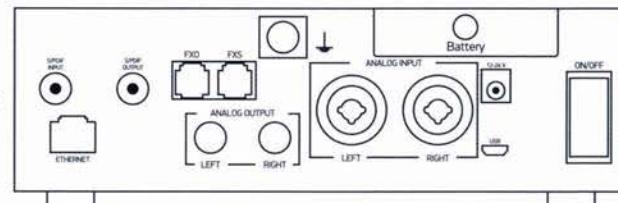
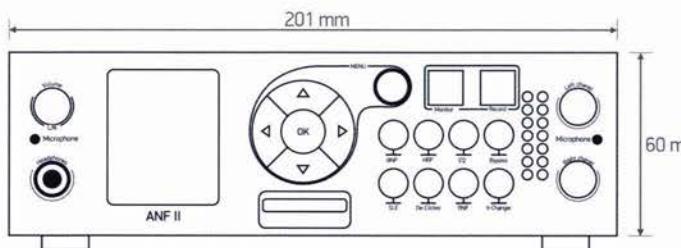
Equalizer



Tone interference filter



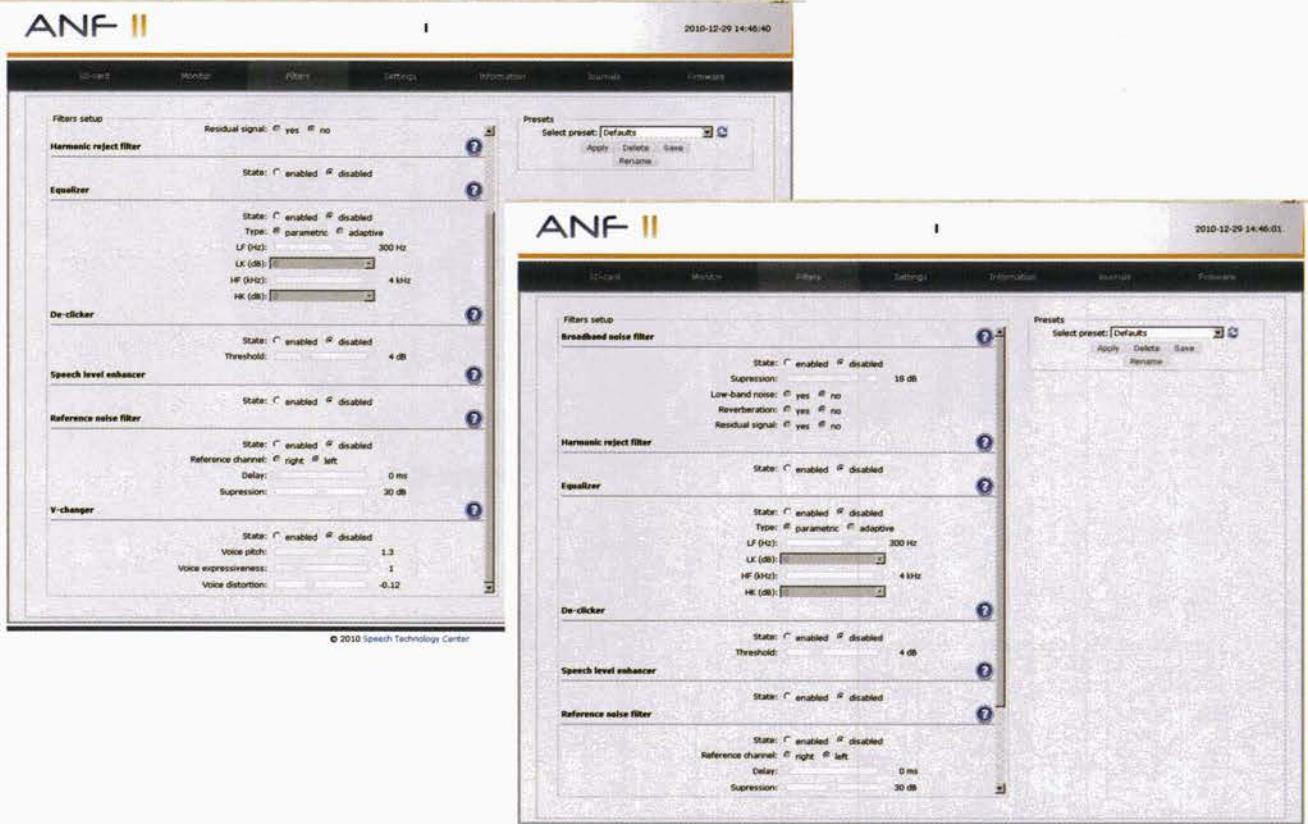
Stereo filter



## Features

- Broadband filter  
Suppresses broadband and periodic noises from electric pick-ups or mechanic vibrations, room and street noise  
Low-band noise suppression mode up to 2 kHz  
Reverberation suppression improves speech legibility in hollow spaces
- Tone interference filter  
Suppresses power line noises; telephone busy signals and other beeps
- Adaptive equalizer  
Recovers speech signals with total harmonic distortions and equalizes signal AFC

- Parametric equalizer  
Weakens or amplifies high and low frequencies
- Speech level enhancer  
Smoothes signal volume and enhances speech
- De-clicker  
Removes clicks, pops and cracks
- Stereo filter  
Suppressing noises of all kinds through the reference channel
- V-changer  
Suppresses noises of all kinds through the reference channel



### Working with files:

- view flash card contents
- file playback
- upload and download files
- process using filters

### Noise suppression:

- turn filters on/off
- adjust filter parameters
- work with presets

### Sound recording:

- turn recording on/off
- bypass option
- I/O channel selection (software option)
- adjust recording parameters and start mode (manually, automatic timer or voice)

### Utilities

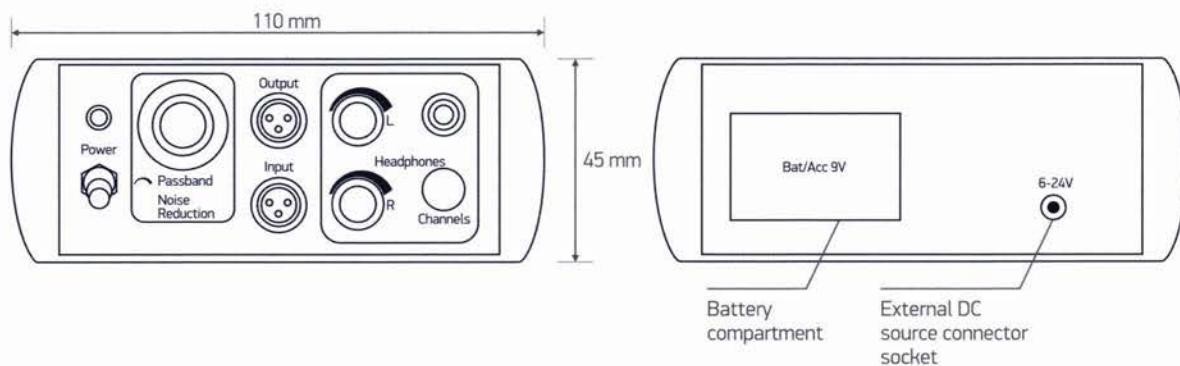
- view device properties
- log device workflow
- PIN protection
- display backlights on/off

### Remote control

- work via web interface
- Hypertext Transfer Protocol Secure (HTTPS)
- authorized access
- firmware updates

# Denoiser Box

STC-L254



## Features

- Effective in decreasing broadband (industrial, street, etc.) and harmonic noises and interference. Adaptive noise filtering algorithms keep speech signal clear and undistorted.
- Removes noise from:
  - air conditioning units
  - office equipment, including computers
  - vacuum cleaners
  - radio channels
- Signal bandwidth adjustable
- Adjustable AGC (automatic gain control)

## Highlights

- Maximum efficiency with minimum unit size
- On-the-fly adjustment of filter parameters during signal input and playback
- Easy to use and efficient in broadband filtering
- Accessories: external microphone, signal input/output cables, 12 V power cable/ lighter plug, carrying case

# Sound Cleaner

STC-L172



1st place medal and diploma, Security Technologies International Forum (Moscow, Russia)



1st place in noise filtering contest held by Audio Engineering Society (Denver, USA)



## Features

- Effective suppression of all types of noises and distortions
- Adaptive filtering algorithms
- Filters can be combined to process noisy recordings simultaneously
- Results saved in \*.wav format
- Real-time noise suppression; filter settings can be changed without interrupting playback

Sound Cleaner operates like a mosaic.

Users can combine modules (processes) in any sequence, designing tailor-made signal processing routines that start from sound input.

Each process in the routine receives a signal from the previous module in the chain, applies its own algorithm and passes the processed signal on to the next module.

The number of modules combined into a single routine is limited only by the processing power of the PC used.

- Expert reports are generated automatically
- Pre-set filter settings for typical / reoccurring noises
- Filter settings can be saved for repeat use
- Parametric equalizer combined with spectrum analyzer
- Pseudo-stereo mode
- Stereo signal filtering by reference channel
- Compatible with any sound editor through DirectX plug-in

## Filters and Features

### Equalizer

One of Sound Cleaner's distinctive features is a parametric equalizer combined with spectrum analyzer, which allows changes to be monitored in real-time.

The equalizer operates in automatic and semi-automatic modes, and can be manually tuned to make fine spectrum adjustments. The filter is ideal for use on recordings that contain stationary noises, such as power-line, mechanical and engine noises, etc. It suppresses a signal's stationary components regardless of frequency and location. It can also be used to raise the amplitude in a specific spectral band.

### Adaptive Inverse Filtration

Adaptive inverse filter is based on the adaptive spectral correction algorithm, sometimes called adaptive spectral smoothing. Adaptive inverse filter effectively suppresses strong periodic noises from electrical pick-ups or mechanical vibrations, thus recovering speech signal and equalizing signal AFC. It amplifies weaker signal components and suppresses the stronger ones at the same time. The average spectrum therefore tends to approach the flat spectrum unmasking the speech signal and improving its intelligibility.

### Impulse Filtration

Adaptive impulse filter automatically restores speech and musical fragments that have been masked or distorted by pulse interferences, such as clicks, radio noises, knocks, etc. During impulse filtration, Sound Cleaner suppresses these pulses by substituting them with smoothed and weakened interpolated signals, thereby effectively increasing audio signal intelligibility.

### Adaptive Stereo Filter

Sound Cleaner provides two different kinds of stereo processing: two-channel signal processing and adaptive stereo filtering. In two-channel signal processing, the sound in each channel is processed independently. In adaptive stereo filtering, data from a reference channel is used to filter the signal in the primary channel. Stereo filter is the ideal solution for recordings made from two microphones.

### Adaptive Broadband Filter

The adaptive broadband filter is based on an adaptive frequency algorithm designed to suppress broadband, periodic noises and interference from electrical pick-ups and mechanical vibrations, interior and exterior environments, communication channels and recording equipment.

These noises, which come across as hum, rumbling, hisses or roars, are nearly impossible to remove with other methods, including one-channel adaptive filtration, spectrum smoothing and equalizers, because they are spread across the entire spectrum and intersect with the speech signal.

### Adaptive Compensation

The adaptive compensation process uses an adaptive filtering algorithm for one-channel adaptive compensation. It is most effective for narrow-band stationary and regular interferences. The filter adjusts itself smoothly, maintaining signal quality. Except frequency compensation, adaptive compensation removes both narrowband stationary interference and regular interference (e.g. vibration, power-line pickups, noise from electrical devices, steady music, interior environment, motor vehicle and water noise, reverberation, etc.).

### Text Report

Sound Cleaner software lets users store processing parameters and current configurations in text files, as well as upload their own templates. The new screenshot feature lets active windows be captured and pasted as illustrations into text files. These features help users generate detailed, illustrated professional reports – indispensable for reinforcing expert testimony in court.

### Settings and Preferences

Sound Cleaner lets users save all settings and tailor-made processing routines and combinations – an invaluable feature for repeat processing in similar environments.

The software also includes a spectrum saving filter that prepares audio files for further identification analysis.

# Technical specifications

Parametres	ANF II	Denoiser Box
Digital filters	<ul style="list-style-type: none"> <li>• Broadband Noise Filter</li> <li>• Low frequency rumble suppression</li> <li>• Anti-Reverberation Filter</li> <li>• Harmonic Reject Filter</li> <li>• Equalizer</li> <li>• Speech Level Enhancer</li> <li>• De-Clicker</li> <li>• Reference Noise Filter</li> <li>• V-Changer</li> </ul>	<ul style="list-style-type: none"> <li>• Broadband Noise Filter</li> <li>• Harmonic Reject Filter</li> </ul>
Dimensions	201x142x60 mm 7.91x5.59x2.36 inches	110x45x113 mm 4.33x1.77x4.45 inches
Weight	1300 g 45.86 oz.	360 g 12.7 oz.
Case	metal	metal
Memory	Built-in SDHC flashcard up to 32GB	—
Power supply	<ul style="list-style-type: none"> <li>• 4xR6 (1.5V AA)</li> <li>• 12-4V from external adaptor</li> </ul>	<ul style="list-style-type: none"> <li>• 1 U9VL-J 9 B battery</li> <li>• 6-24 V from external adaptor</li> </ul>
Operation time (without battery change)	8 hours (minimum)*	14 hours (minimum)
Sampling rate	8, 16, 44.1 (kHz)	11.025 (kHz)
Interfaces	<ul style="list-style-type: none"> <li>• Analog line balanced/unbalanced inputs: XLR/TRS connector</li> <li>• Analog line balanced/unbalanced outputs: ¼" TRS connector</li> <li>• Digital input/output: Coaxial S/PDIF format RCA connector</li> <li>• Telephone input/output: RJ-11 connector</li> <li>• Headphones output: ¼" stereo TRS connector</li> <li>• Network: Ethernet 10/100 BASE-TX</li> <li>• PC interface: USB 5-pin Mini</li> </ul>	<ul style="list-style-type: none"> <li>• Analog line I/O: mini XLR</li> <li>• Headphones output: 1.5" stereo</li> </ul>

\* If Energizer Lithium batteries are used

# TRANSCRIPTION SYSTEMS

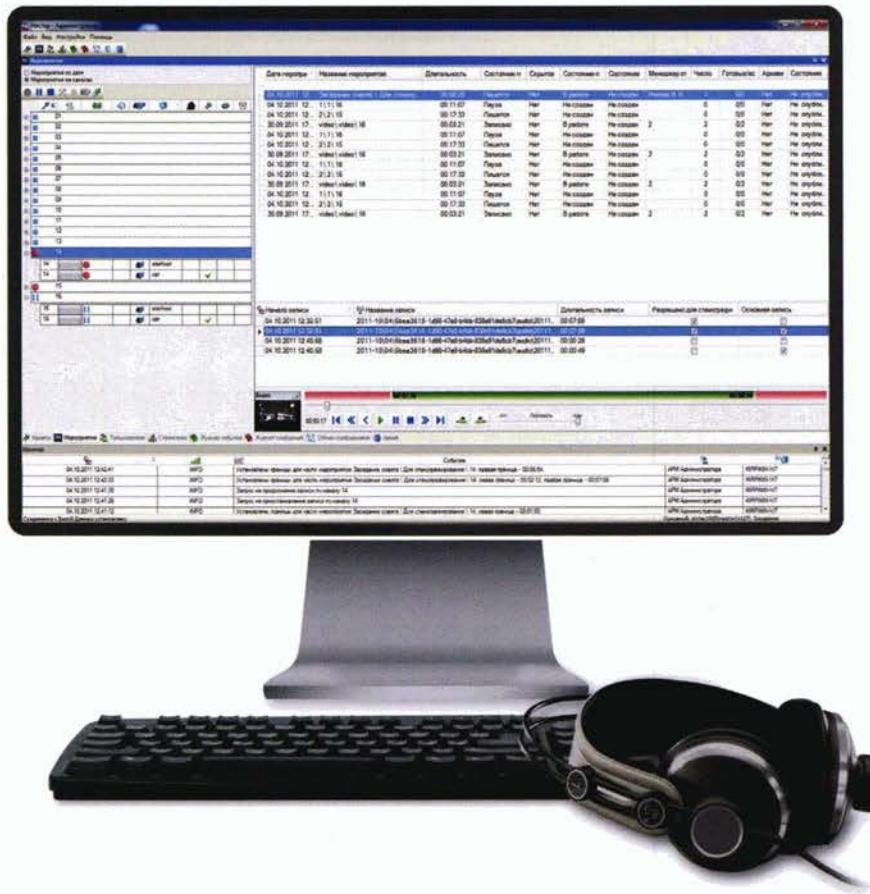
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Information processing and information storage makes considerable demands on financial and manpower resources in contemporary institutions.

The information burden faced by organizations—from corporate enterprises, to judicial and governmental institutions—is on the increase. Efficient business management demands effective documentation workflow optimization.

In organizations that maintain records of oral proceedings, transcription automation keeps documentation costs down while meeting archival needs. STC's transcription systems are widely used in judicial and governmental institutions.





### Description

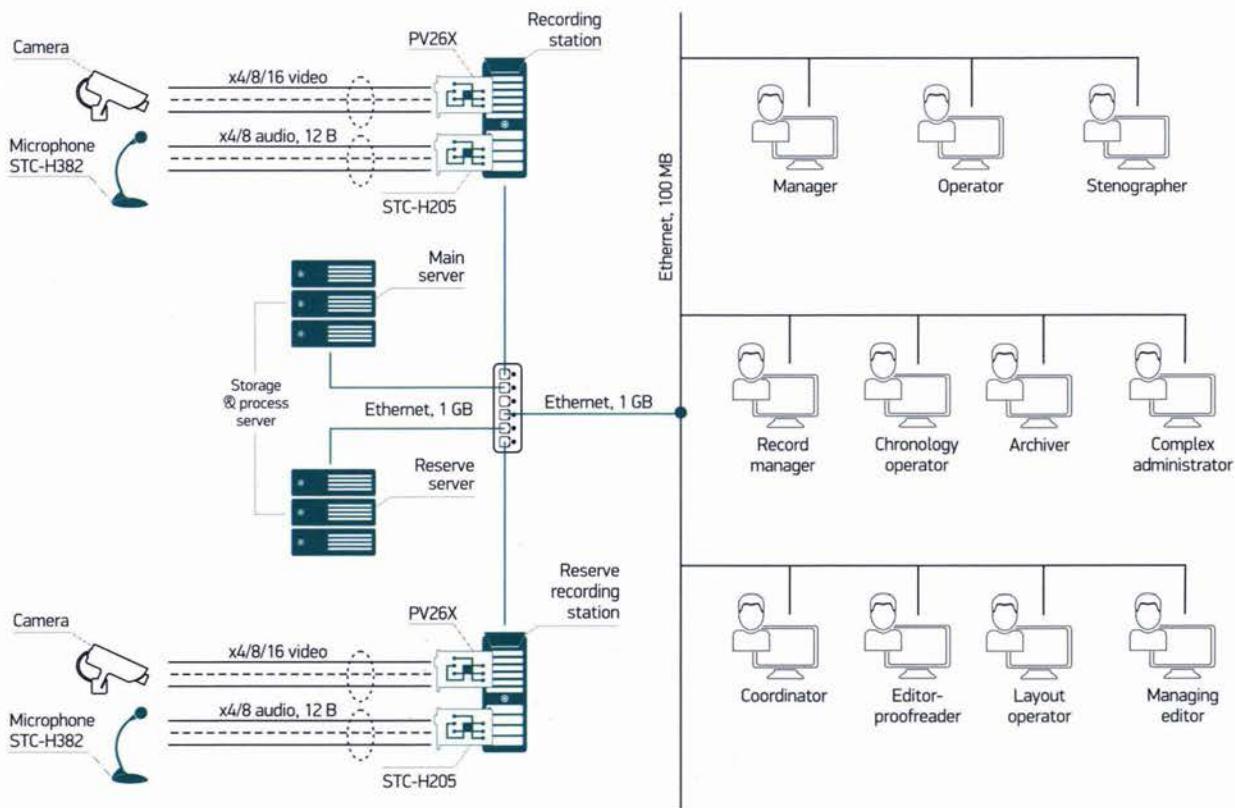
Quick and convenient transcription of real-time and/or recorded speech

### Application

- Transcription of speeches and meetings
- Documentation of conferences, forums and focus groups sessions
- Transcription of court sessions

### Features

- Multi-channel recording from audio equipment line outputs
- Accelerated speech transcription achieved by automatic distribution of audio fragments between operators
- Final document revision with simultaneous playback of corresponding audio fragments
- Integration with conference systems including Beyerdynamic MCS-50 and Bosch DCN Next Generation
- Integration with other systems, e.g. legal procedures, records management, electronic archiving



#### Functionality

- Acoustic and visual quality control
- Multi-channel recording of audio and video from equipment line outputs
- Automatic transfer of fragments between operators and editors with adjustable fragment length
- Simultaneous video, audio and text playback (loop, speed up/ slow down without audio distortion)
- Simultaneous video, audio and text search options
- Multiple users can edit simultaneously
- Supports various audio and video formats
- Audio-text correlation. Clicking on a particular text fragment brings up the corresponding audio
- Recording remote control from conference hall or via network
- Enables text messaging between stenographers, manages message history
- Audio and text archiving on the server
- Monitors user actions and logs workflow history
- Generates statistical reports

## System Hardware

P/N	Device	Description	Specifications	Image
PV261/PV266	Video capture board	Capture board for 4/8/16 channels of analog video signal	PCI, NTSC/PAL, H.264, 1-25 fps	
STC-H205/4* STC-H205* STC-H433	I/O board	Analog input/output board	4, 8, 16 channels PCI/PCI Express x 1, 16/24 bit, 8-96 kHz	
STC-H317	External interface block	Pairs the 4 external audio sources with the STC-H205 and H205/4 boards; pairs the 4 external video sources with the V260/PV261/PV266 boards	Symmetric XLR, DB-25F header for I/O boards	
STC-H333	Remote recording control	External device with two button indicators for remote recording control	"Stop" button (green); "Rec" and "Pause" button (red)	
PHILIPS LFH2320/00	Foot pedal	Foot pedal to control audio playback during text transcription	USB-interface	
STC-H382	Microphone	Table microphone. Different models available. Can be located up to 1.5 km from the record server	Voltage: 12V Microphone current drain: 11 mA Gain: 100	

\* Complies with CE and FCC standards.



## Application

Caesar is a fast and efficient text transcriber—ideal for generating transcripts of meetings, negotiations, lectures, interviews and other events.

The software can provide speech documentation in real-time, as well as transcribe pre-recorded speeches.

## Functionality

- Combines a multi-functional digital voice recorder and a text editor
- Listening and transcribing of audio information immediately after a sound recording has been started
- Real-time recording and simultaneous text transcription
- Oscillogram image of a sound file
- Noise suppression mode allows getting rid of constant noises in

the room

- «Always-on-Top» mode

## Features

- Transcription speed increases 2-3 times for a skilled typist and up to 5-10 times for an inexperienced one
- Linking audio fragments to the text allows transcription quality control and makes correction easier
- Available as a plug-in for MS Word 2003/2007/2010
- Available for a laptop, external microphones and digital recorders
- Adaptation to any language

# Technical Specifications of Transcription Systems

Parameter	Cesar	Nestor
Video recording	-	<ul style="list-style-type: none"> <li>704x576 resolution, 25 fps, on-board video compression, H.264 codec (similar to MPEG4 part 10)</li> </ul>
Audio recording	WAV, MP3, DCT	WAV
Transcription source	audiofiles, microphone, linear hardware inputs	audiofiles, microphone, linear hardware inputs
Spell check		automatic
Playack control		loop, fastening/slowing without audio distortion
Noise filter	broadband	-
Fragments transfer between operators and editors	one operator	manual fragment choice automatic fragments distribution
Documentation editor		MS Office Word 2003/2007/2010
Audio import	WAV, WMA, MP3, OGG, AC3	WAV, WMA, MP3, OGG, AC3, MPEG, MPEG2, MPEG4, AVI, MOV
Transcription process visualization	-	<ul style="list-style-type: none"> <li>current operators' workload</li> <li>transcription status</li> </ul>
Software and hardware reservation	-	<ul style="list-style-type: none"> <li>record station</li> <li>system server</li> </ul>
Interface		Windows application
OS compatibility	Windows XP/7 (32, 64)	Windows Server 2003/2008, Windows XP/7

# VIDEO SURVEILLANCE

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The peculiarity of AVIDIUS surveillance system is its capability of detecting and confirming the perimeter trespassing. The crucial point of successful detection and confirmation of an unauthorized trespassing is the possibility to control the motion of the cameras located along the given perimeter and its inner boundaries.

The distinctive feature of AVIDIUS surveillance system designed to be one of the most effective trespassing detection systems is its capability of audio data recording.

The combination of the cutting-edge technologies of audio and video recording in a single AVIDIUS system allows increasing the efficiency of video surveillance as a part and parcel of a modern corporate security system.





#### Application

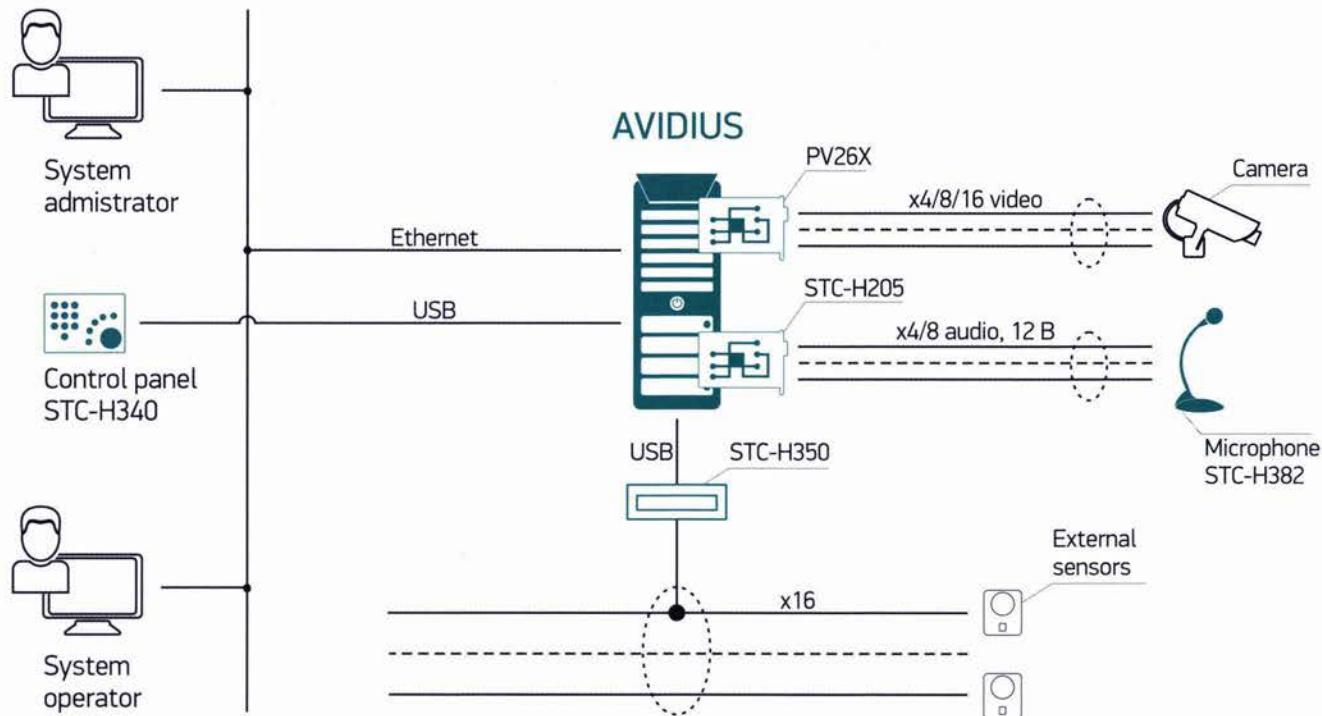
- Realization of video surveillance at different facilities
- Audio and video real-time recording

#### Highlights

- Video surveillance in crowded places
- Audio and video real-time recording in noisy environment
- Ability to create an effective trespassing detection security system

#### Features:

- Professional quality of audio and video
- Work with control panel and voice commands
- Voice notification and warning
- Camera motion control: turns, angles, zooming
- Recording watermarked video data
- Voice activation mode
- Work with archives with Time Line, as in video edit systems
- Audio noise suppression

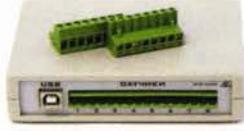


#### Functionality

- Recording up to 64 channels per server
- Recording all channels simultaneously with only one button
- Automatic camera motion
- Various modes on-screen arrangement of cameras
- Individual or group camera settings
- Audio and video surveillance through Ethernet
- Remote control from any station according to granted access permissions
- Voice command language-independent control
- Means of control: mouse, control panel
- Instant screenshot capabilities

- Original control unit Shuttle-Jog for speeding up slowing down playback
- Voice recording without compression (PCM) within 10 meters
- Simultaneous noise suppression of several channels
- Jog Dial system for frame by frame playback
- Search of event by time or selected camera
- Selected segment loop playback
- Setting the hot keys
- Information transmission via TCP/IP
- Voice notification and warning module based on STC TTS patented technology Orator

## System Hardware

P/N	Device	Description	Specifications	Image
PV260	Video capture board	Capture board for 4/8/16 channels of analog videosignal	PCI, NTSC/PAL, h.264 1-25 fps	
STC-H340	'Skipetr» control panel	Speeded up, slow and frame by frame playback	USB HID compatible, voltage - 5V. Dimensions: 200x150x40 mm 7.87x5.9x1.57 in	
STC-H350	Input device for sensor signals	Arrangement and processing of the signals from external sensors	USB HID compatible, voltage - 5V, 16 sensors. Dimensions: 130x100x30 mm 5.12x3.94x1.18 in	
STC-H205/4* STC-H205*	I/O device	I/O analog signal device	PCI, 4 and 8 channels, ADC 16 bit, 8-16 kHz, STC-H382 microphones phantom power	
STC-H382	Microphone	Acoustic control of video surveyed areas	Supply voltage: 12V Microphone current drain: 12 mA Gain: 100	

\* Meets CE and FCC standard requirements

# Technical specifications of video surveillance system

Parameter	Description
Video recording	<ul style="list-style-type: none"><li>• 4CIF resolution 25 fps per channel</li><li>• H.264 codec (similar to MPEG4 part 10)</li><li>• 704x576 resolution per channel (irrespective of the number of channels)</li><li>• maximum frame size: 15 KB</li></ul>
Camera motion control	<ul style="list-style-type: none"><li>• RS-485 interface</li><li>• control protocols:Samsung, Pelco-D,Pelco-P, Aelc</li></ul>
Frame change interval in rotation mode	from 1 to 120 sec.
Export file format	AVI
Archive playback interval	from 0,5 hr to 3 days
Audio recording	<ul style="list-style-type: none"><li>• 8-22.05 kHz</li><li>• 16 бит, PCM (without compression)</li><li>• 8 bit, G.711, A- Mu-law</li></ul>
Types of "alarm recording"	<ul style="list-style-type: none"><li>• video detector</li><li>• audio detector</li><li>• compulsory recording</li><li>• timer</li></ul>
Microphone location	STC-H382 - up to 1,5 km from recording server
Noise reduction filter	broadband filter (suppression of street and office noises)
Cases of verbal notification (speech synthesis)	<ul style="list-style-type: none"><li>• movement detection</li><li>• acoustic detection</li><li>• external sensor response</li><li>• no user rights to work with the system</li></ul>
Voice control	Speaker dependant
External sensors quantity	up to 192
Operator interface	Windows application
OS compatibility	Windows XP/Vista/7 (32/64)

For notes

A blank sheet of white paper with horizontal ruling lines, intended for handwritten notes. The paper is oriented vertically and occupies the lower two-thirds of the page.

For notes

A blank sheet of white paper with horizontal ruling lines, intended for handwritten notes. The paper is oriented vertically and has a clean, minimalist appearance.





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Email: sales@speech-tek.de



## Algorithm accuracy:

Uses 3 exclusive methods to automatically compare "voice models" against voice recordings obtained from different sources such as cell phones, land lines, covert recordings and recorded investigative interviews.

## Voice sample quality:

Handles speech patterns from various sources, delivering high-quality results with low-quality samples.

## Scalability:

VoiceGrid™ Nation is a universal platform for voice data management, operating directly on data in the lab and networked to regional, state or national databases.

It can be scaled on multiple levels:

- Database size
- Number of operators
- Number of computational servers

## Technical support:

Two-level technical support, available 24/7, from:

- STC development headquarters
- Local STC service centers

## Data security:

Data storage and transmission are secured by:

- HTTPS protocol
- Access rights assigned according to operator group, rank and/or function
- Tracking and recording of all operator actions
- Measures to eliminate password theft in the workplace

## Web-based access:

- User-friendly software interface
- Works on any web browser

## Integration:

Easily integrated with STC expert forensic systems, as well as with other biometric and non-biometric systems.

## Platform independence:

- Compatible with any operating system
- Easily integrated with existing IT infrastructure.

## Customer training:

STC specialists provide comprehensive, hands-on training.

## The VoiceGrid™ Product Line

**VoiceGrid™ Nation** – networked 1:N search and voice data management solution with unlimited database size and unlimited web client workstation connectivity. Distributed processing and WAN architecture designed for large city, county, state or national system deployments.

**VoiceGrid™ Local** – single server network solution for 1:N searches, supports a database of up to 10,000 records and up to 10 workstations.

**VoiceGrid™ X** – a stand-alone application for speaker identification in multiple files. Performs a N:N search of up to 100 target speakers in up to 10,000 records per day.

**VoiceGrid™ RT** – a sophisticated distributed solution for real-time speaker identification in communication channels, phone calls, files from mobile devices and other sources. Integrates with voice database up to 10,000 target speakers which can be scaled up to millions of processed records per day.

## Voice biometrics

The human voice is a unique feature that is useful in biometric identification over a wide range of both government and commercial applications. It has proven value within law enforcement as an investigative tool and within the telecommunications industry for both identification and verification uses. Voice recording is recognized as a non-invasive technology and therefore can be easy to introduce in both passive and active modes across multiple markets and applications.



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## Voice Biometric Solutions: VoiceGrid™ Nation

### Automated voice biometric system

VoiceGrid™ Nation is networked 1:N search and voice data management solution with unlimited database size and unlimited web client workstation connectivity. Distributed processing and WAN architecture designed for large city, county, state or national system deployments.

- VoiceGrid™ Nation implements, maintains and automates a universal voice database system at local, regional and/or national levels
- Integrated STC voice biometric capabilities perform 1:N search and automatic voice identification
- Forensic investigation of voice biometric data provides admissible evidence in court proceedings

As with the entire VoiceGrid™ product line, voice matching is accomplished through the utilization of the STC exclusive methods of processing, segmentation, feature extraction and identification of voice samples. This ensures the highest levels of accuracy and provides an additional and valuable tool in assisting in investigations where voice evidence may be present such as:

- Kidnapping
- Extortion
- Domestic Violence
- Terroristic Threats
- Prank or False Report Calls
- Corruption
- Drug Trafficking
- Gang & Organized Crime
- Abuse of Emergency or 911 Communication Channels

### Key figures:

**3** seconds

Minimum required speech pattern for analysis

**5** seconds

Search/match in 10,000 voice samples

**10** seconds

Average time for feature extraction

Executes up to **100** simultaneous searches

Accommodates up to **1,000** active users

Stores up to **2,000,000** samples