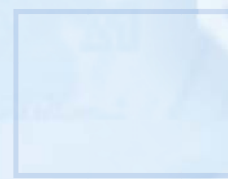
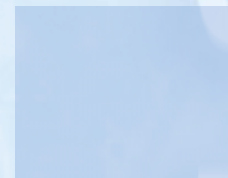
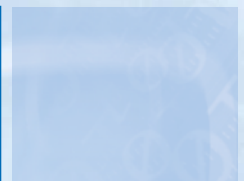
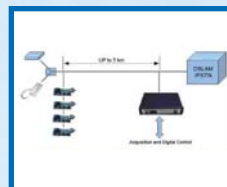
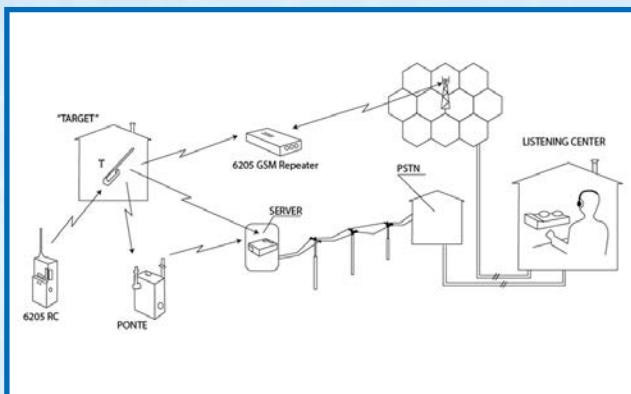


ASN

Audio Surveillance for GSM / PSTN / ACC / ADSL Networks



Audio Surveillance for GSM/PSTN/ACC/ADSL Networks

Ref	Number	Description
1	6401	Audio Surveillance GSM Spy Phone
2	6402	Audio Surveillance Via GSM Network
3	6403	GSM Data and Audio Recorder
4	6404	Audio Surveillance Software Manager
5	4016	The Informant
6	6205	Covert Audio Surveillance System With Remote Control
7	6205 RC	Remote Control Transmitter Activator For 6205 Transmitter
8	6206T	Covert Audio Surveillance Micro Transmitter
9	6206 HPT	Covert Audio Surveillance High Power Transmitter
10	6206 Receiver	Dedicate Receiver
11	6206 Programmable Receiver	Adjustable Frequency Receiver
12	6206DS	Local Docking Station
13	6206DSP	Local Docking Station with DSP
14	6206 Server	Micro Room Transmitter System
15	6206 Ponte	RF Repeater for Micro Room Transmitter System
16	6206 GSM Repeater	GSM Repeater System For 6206 Series
17	4004	Multi Room Monitoring via Telephone Lines
18	4005	Audio Monitoring via Power Lines
19	4020	Audio Surveillance Network
20	4029	Universal GSM Module

Audio Surveillance GSM Spy Phone

Model 6401

Incorporating the latest technology we are proud to announce the arrival of the GSM spy phone. These phones have the following features:

- Listen-in to the mobile conversations made/received on the Spy Phones
- Receive copies of all incoming & outgoing SMS (text) messages
- Notification, via SMS, of when a call is made or received with the number of the caller or number dialed
- Listen-in to the surrounding conversations/noises of the 'Spy Phone'
- Notification, via SMS, of when the SIM card has been changed and its new number
- Remotely change the 'AN' (Access Number) by simply sending an SMS (text) command
- No alert to the target as there will be NO logs, lights flashing, noises or vibration when a 'Spy' feature is activated

SMS INTERCEPTION

Simply give the target the Spy Phone and every time they send or receive a text message a copy will be sent to your phone (or a different predefined mobile number). Your copy will include the actual message, the sender/recipient's number and the time & date.

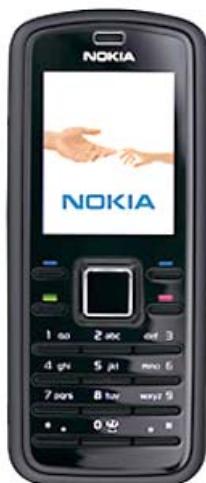
CALL INTERCEPTION

Every time the target makes/receives a call with the Spy Phone you will be notified via SMS with the caller's number or the number the target has dialed and if you ring the Spy Phone from the access number you will be able to intercept the call and hear both sides of the conversation.

ROOM INTERCEPTION

When the Spy Phone is on, but not in use, you can ring into the Spy Phone from the access number and listen-in to the surrounding conversations/noises. This is the latest and most popular method of monitoring mobile phone activity, whether it's to monitor partners/spouses, colleagues or even your children.

Mobile Phone Examples



Audio Surveillance Via GSM Network

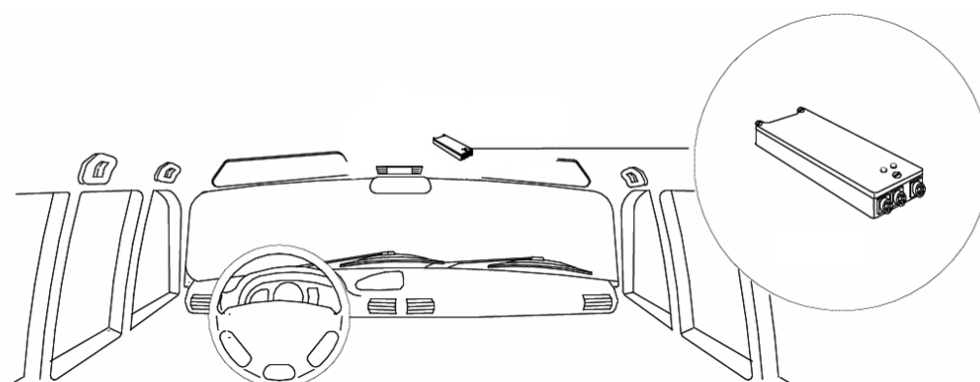
Model 6402

The Model 6402 series is the latest addition to the GSM audio surveillance product line. Elaman has updated the design of established GSM audio surveillance products to increase deployment versatility, while reducing enclosure size and power consumption.

The Unit is suitable for covert audio surveillance in both mobile target and fixed concealment applications. Because the Unit communicates with the listening center over the voice channel of the GSM network the operating range is unlimited. The two microphones supplied with the Unit can be concealed in different areas of the target vehicle or room. The unit can be used anywhere GSM network coverage is available, making it ideal for concealment in buildings and exposed locations where conventional RF devices do not provide sufficient operating ranges for safe monitoring.

Distinguishing characteristics are:

- small size and rugged construction
- exceptional audio quality
- reduced power consumption
- unattended operation, once installed no operator intervention is required



MAIN FUNCTIONS

- Automatic calling to the listening center in case of motor sensor activation, a VOX event or when its digital input - connected to the vehicle electrical circuit - receives any information from it
- Programmable with SMS and with DTMF tones/Transmission of status information via SMS
- Light sensor for discovery detection, sends an alarm via SMS

TECHNICAL FEATURES

Audio monitoring unit for covert audio surveillance using the GSM network, with dual SIM cards capability

Microphones	2, selectable - 7 levels 0+36 dB
Current drain	receiving; approximately 20 mA @ 12 V transmission; 80÷160 mA @ 12 V
Dimensions (mm)	90 x 39 x 11

GSM data & audio Recorder

Model 6403

The Model 6403 can be equipped with an internal solid state recorder for recording during periods when communications are lost or unadvisable. The unit automatically records when audio is detected and the device is not communicating with the listening center. This recording can be downloaded later when conditions allow GSM communications to take place.

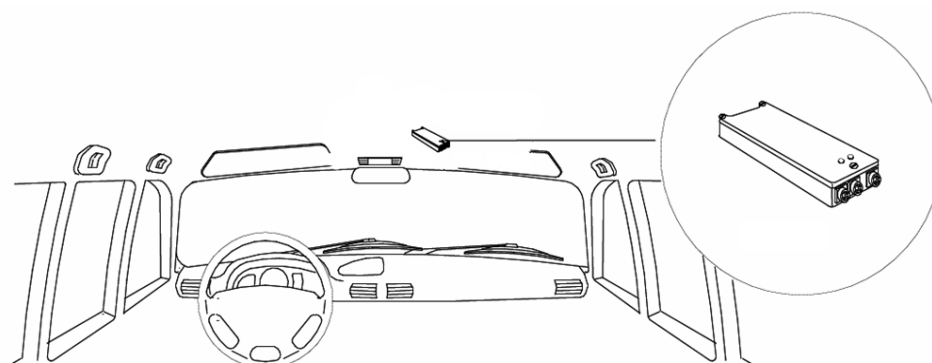
Other distinguishing characteristics are:

- small size and rugged construction
- exceptional audio quality
- reduced power consumption
- unattended operation, once installed no operator intervention is required



MAIN FUNCTIONS

- Automatic calling to the listening center in case of motor sensor activation, a VOX event or when its digital input – connected to the vehicle electrical circuit – receives any information from it
- Programmable with SMS and with DTMF tones/Transmission of status information via SMS
- Light sensor for discovery detection sends an alarm via SMS



SPECIFICATIONS

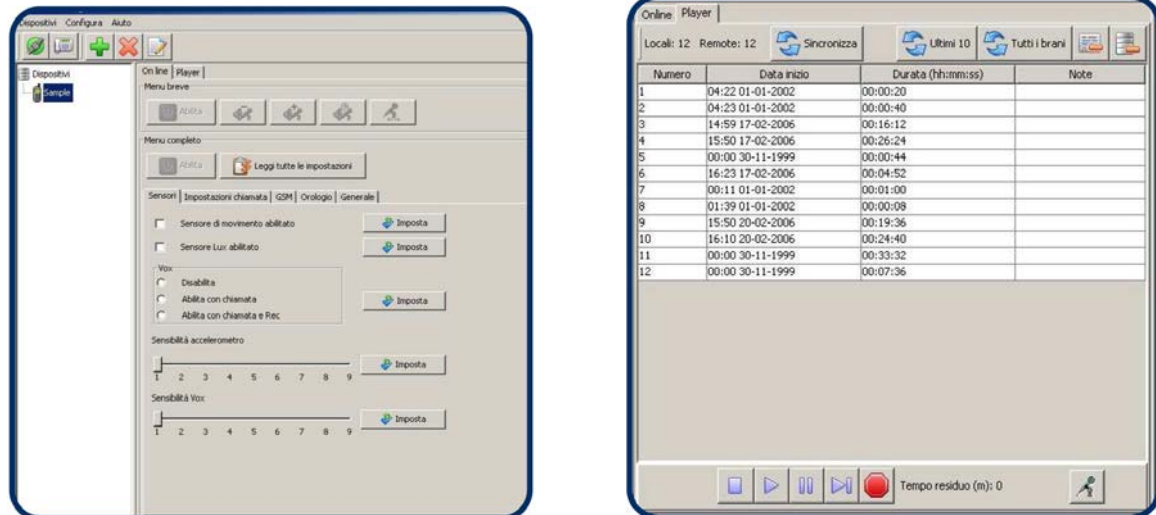
Audio monitoring unit for covert audio surveillance using the GSM network, with internal solid state recorder.

Model 6403 Characteristics

Microphones	2, selectable - 7 levels 0÷36 dB
Current drain	Receiving: approximately 20 mA @ 12 V Transmission: 80÷160 mA @ 12 V
Dimensions (mm)	90 x 39 x 11
Recorder Characteristics	
Bandwidth	300÷3400 Hz (telephone system quality)
Compression algorithm	ADPCM 2:1 at 4 bit
Sample rate	8 KHz
Recording time	2h 20 m

Audio Surveillance Software Manager

Model 6404



The Model 6404 is a graphic user interface to simplify the operator activity in setting and monitoring the Model 6402 and Model 6403 remote units.

With this software it is possible:

- to manage various units, each of them can be singularly called and set
- to listen-in to the audio of a single target unit in real-time and to record at the same time on the PC hard disk
- to manage the Model 6403 track list, operating on the commands play/record/delete
- to directly download the Model 6403 tracks on the PC hard disk

The Model 6402 is a small and compact device suitable for covert audio surveillance in both mobile target and fixed concealment applications, for safe monitoring.

To enhance the network accessibility and increase the reliability of the Model 6402 communication channels, a second SIM card from a different GSM provider can be installed in the unit. The unit can then be programmed to switch (automatically or manually) between the two GSM providers depending on which provider has the best coverage.

The Model 6402 can communicate to the listening center via SMS and act according to pre-set conditions or alarms arising from its sensors (motion sensor, vox, light sensor, digital inputs connected to the vehicle electrical circuits).

The Model 6403 joins the characteristics of the previously mentioned device with a solid state recorder and high-density flash memory.

The Model 6403 automatically records when audio is detected and the device is not communicating with the listening center. This recording can be downloaded later when conditions allow GSM communications to take place.

The Informant

Model 4016

OVERVIEW

Deployed in situations where a user's true mobile number needs to be withheld, The Model 4016 is a convenient means of providing untraceable communications by both voice and SMS text messaging and is ideal for:

- Law enforcement informant and operative management
- Intelligence and counter intelligence work
- Hostage/kidnap communications
- Witness relocation/protection communications
- Providing undercover operatives a covert communications recording facility
- Counter measures against GSM location services

The Informant is a remote call diverter for use with GSM cellular networks. It allows calls to a given GSM mobile to be diverted to another mobile, thereby ensuring the anonymity of the called party.

Where an incoming call has to be monitored e.g. kidnap scenarios, the Informant offers digital recording and live monitoring on all diverted calls.

Key features of the system are:

- Receive and transmit text messages from any GSM network
- Automatically redirect text messages to a predetermined mobile
- Internal logging of all received and transmitted messages
- Logging of all user interactions with the system
- Redirect voice calls to a predetermined number
- Change predetermined number via text message
- Digitally record voice calls. (Analog output also available)
- Operates with any GSM network provider (including pre-paid)
- Totally under the control of the operator. No network involvement
- Compact system, totally portable (12v dc power requirement)



THE INFORMANT

The GSM Call diverter the Informant system consists of:

- The informant communications module containing two GSM terminals and USB interface
- Controller PC running the application software and controlling the individual GSM terminals within the Model 4016

The system controls phones by answering calls, making calls, re-directing text messages and voice calls to other numbers, and logging CLI (caller ID) with or without answering the call. All voice and text information is stored in an easily configured database on a hard disk, for simple interrogation of data.

The Informant

Model 4016

THE INFORMANT COMMUNICATIONS

The Model 4016 module contains two digitally controlled Tri Band GSM phone terminals, each capable of handling voice or SMS text messaging. The received audio and text from one module can be retransmitted by the other module, and vice versa. These modules are able to accept SIM cards, pre paid (or contract), which makes them virtually untraceable and allows easy replacement if any number is compromised. The Model 4016 provides an analog audio output (stereo jack socket) for live monitoring or analog recording. Two SMA aerial connections are provided with suitable aeriels. Power required is 12V DC. A switch mode power supply and a vehicle 12v adaptor are supplied with the Model 4016.

CONTROLLER PC

Model 4016 communicates with the controlling PC via the industry standard USB interface. The PC can be equipped with a CD-writer for system backup and 10/100 LAN interface for connection and control over a network.

The software provides secure password protected control over the system configuration, as well as an audit facility that maintains a record of system changes and includes:

- Date, time, and incoming, outgoing calls per facility (CLI and DNI)

- SIM history (date inserted into module and module IMEI)

- Handler history per facility

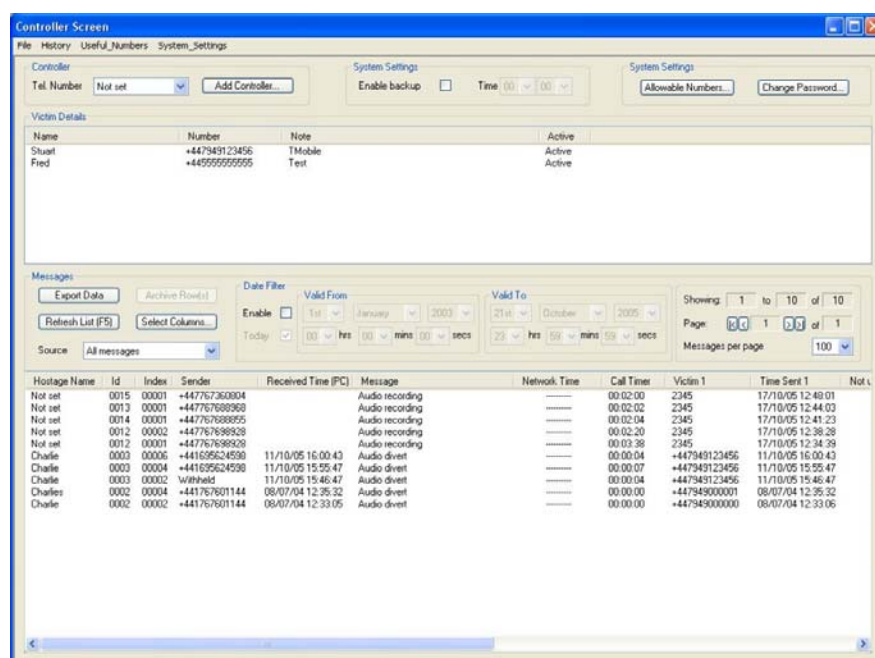
- External time reference interface (Rugby/GPS/Internet)

- Record of changes to any 'editable' function (Tamper Proof)

- System administrator access. All received text messages

- Digital recording and play back of all calls

- Built in database to organize data, and aid in presentation of cases



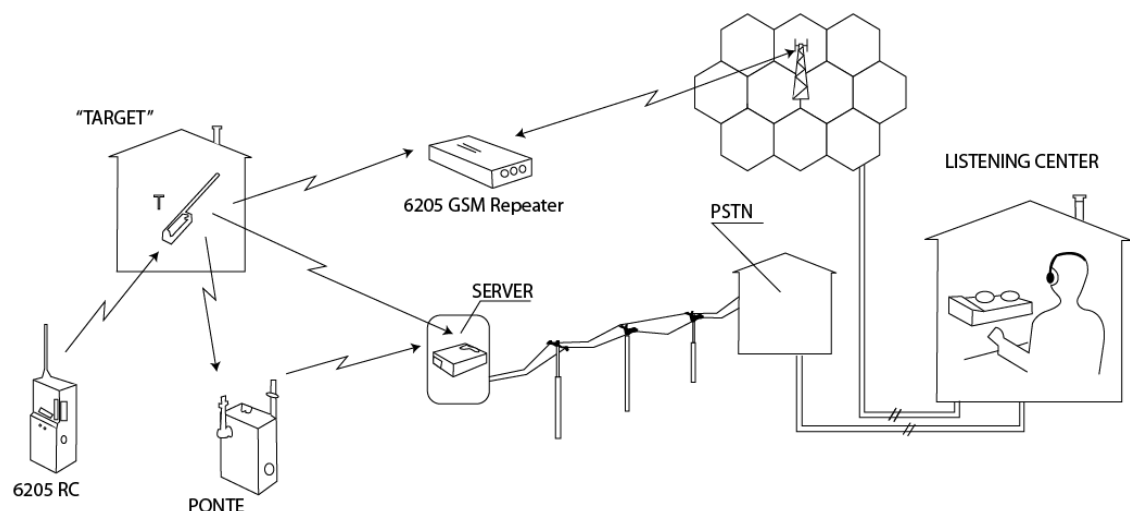
Covert Audio Surveillance System With Remote Control Model 6205



The Model 6205 is an audio surveillance system that employs an innovative Time Modulation Very Wide Band (TM-VWB) pulsed transmission technique. The TM-VWB transmission is very difficult to detect or intercept, using RF detectors and other conventional sweeping techniques. This unique transmission technique also drastically reduces power consumption. The operating battery life of the Model 6205 is over 30 times longer than conventional transmitters with the same peak output power level. These characteristics of the system, including integrated remote control, make the Model 6205 system ideal for both short- and long-term concealment installations.

The transmitter has an integrated AC receiver providing remote control of transmitter functions and auxiliary control outputs. This includes the ability to turn the transmitter on and off, extending battery life and helping to prevent detection.

Wide selections of complementary equipment provide many deployment options and increase the versatility and reliability of the Model 6205 system. An example is the ability to re-launch the signal over the cellular network, which provides unlimited operating range.



Covert Audio Surveillance System With Remote Control Model 6205

MODEL 6205 TECHNICAL FEATURES

MODEL 6205 T

Micro transmitter – Concealment transmitter with integrated remote control receiver includes microphone for concealment near the target.

Range	305÷365MHz
Power supply	4÷12V
Stand-by consumption	0.5mA
Consumption	1.2÷3 mA
Output power	10÷200 mW
Audio dynamic range	60dB
Audio bandwidth, -3 dB	50 HZ ÷ 8 KHz
Dimensions (mm)	41 x 17 x 7



MODEL 6205 RECEIVER

Receiver Module – Fixed frequency receiver for the transmitter.

Range	305÷365MHz
Power supply	8÷14V
Consumption	36 mA
Audio level output	200 mVpp
Audio bandwidth, -3 dB	50HZ÷10 KHz
Sensitivity	-90dBm
Dimensions (mm)	73 x 45x 10



MODEL 6205 PROGRAMMABLE RECEIVER

Adjustable frequency receiver Module – Receiver used with the 6205 GSM Repeater and Model 6205 Ponte. Also compatible with Model 6205DS and DSP.

Range	300÷399.9MHZ
Power supply	8÷14V
Consumption	50 mA
Tuning Steps increment	100KHz
Audio level output	200 mVpp
Audio bandwidth, -3 dB	50HZ÷10 KHz
Receive Sensitivity	-90dBm
Dimensions (mm)	73 x 45x 10



Covert Audio Surveillance System With Remote Control

MODEL 6205DS

Local Listening Base – Docking station for either the Model 6205 Receiver or the Programmable Receiver with the signal strength meter. Headphones, recorder and phone line connections are provided. A wide variety of deployment requirements are supported with real-time monitoring, using headphones or unattended operation utilizing the VOX control and recorder.

External Power supply	from 100 to 240 V ac/12 V dc
Internal power supply	1.5 Ah rechargeable batteries
Front panel meter, switch selectable	RSSI(dBm) – B.F. (mV) Vlin.(v)
Recording level	external adjustment
VOX level	external adjustment
Audio outputs	earphone and recorder jack
Internal voltage booster	28 V out
B.F. generator	1V p.e.p. out
Dimensions (mm)	130 x 90 x 40



MODEL 6205DSP

Local Listening base – functionally the same as the Model 6205 DS, the 6205 DSP adds a DSP filter to significantly reduce background noise.

External power supply	from 100 to 240 V ac/12 V dc
Internal power supply	1.5 Ah rechargeable batteries
DSP	4 steps of noise reduction
Front panel meter, switch selectable	RSSI(dBm) – B.F.(mV) Vlin. (V)
Recording level	external adjustment
VOX level	external adjustment
Audio outputs	earphone and recorder jack
Internal voltage booster	28V out
B.F. Generator	1V p.e.p. out
Dimensions (mm)	130 x 90 x 40



Covert Audio Surveillance System With Remote Control

MODEL 6205 SERVER

Phone Line Interface – with a Receiver Module installed, the Model 6205 Server re-launches the received audio through a dedicated phone line.

Power Supply	18÷60V
Audio output level	2 Vpp max
Level adjustment	external by screwdriver
Line isolation	> 20 M Ohm towards the box
Dimensions (mm)	80 x 58 x 27



MODEL 6205 PONTE

RF Repeater – Using the Programmable Receiver Set turned on the frequency of the micro-transmitter, the Model 6205 Ponte re-launches the range of the transmission.

Power supply	9÷24V
Consumption	<80 mA
Output power	1W
RX sensitivity	-90 dBm
Dimensions (mm)	80 x 58 x 27



MODEL 6205 GSM REPEATER

Re-launch over the cellular network – using the internal programmable receiver module the Model 6205 GSM Repeater can re-launch the receiver audio from the Model 6205 T over the cellular network. There are many functions that can be programmed, including automatic re-launch when events are detected. Programming is accomplished using DTMF tones. The 6205 GSM Repeater is protected from unauthorized use by a security code, which must be entered before audio monitoring can take place.

Setting	from Listening Center
Audio selection	Microtransmitter: Model 6205 T
	Auxiliary microphone
VOX sensitivity	10 levels
F Set Module	frequency range: 300÷399.9
	Step: 100 KHz
Power supply	6÷36V
Transmission	250 mA @ 12V
Dimensions(mm)	123 x 64 x 30



Covert Audio Surveillance System With Remote Control

MODEL 6205 RC

Remote control – RC Transmitter for the remote control of the Model 6205 T

Internal power supply	Ni-Mh 1.5 Ah rechargeable batteries
External power supply	220 vac/12 V cc mains power supply
Out peak power	2 W
Codes	100
Functions	On/Off Microphone tone Microphone gain Power adjustment for Model 6205 T with Model 6205 T var.
Dimensions mm	120 x 60 x 40



MODEL 6205 T VAR

TX Power Adjustment Module – Remote controlled Model 6205 transmitter Transmit power adjustment. Works with 6205 RC.

Cyclical out peak power adjustment of	4 steps pre-defined Microtransmitter Model 6205 T
Dimensions (mm)	22 x 9 x 4

PW 10-12

Power Supply – 10 mA 12 V power supply for the Model 6205 T

Power available	0.3 W
Input voltage	220 V ac \pm 10%
Output voltage	12 V
Max current	15 mA
Dimensions (mm)	44 x 26 x 10

Covert Audio Surveillance System

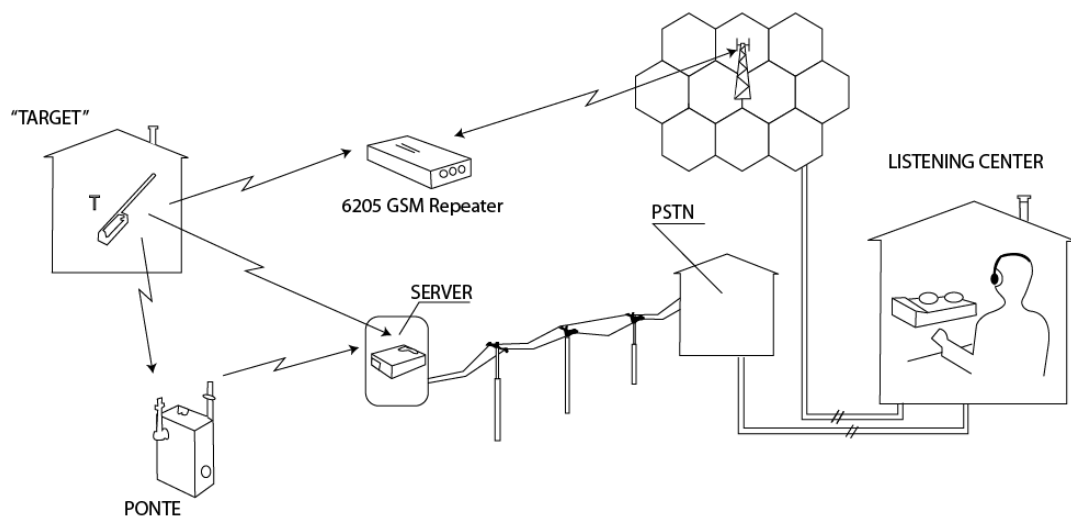
Model 6206



The Model 6206 is an audio surveillance system that employs an innovative Time Modulation, Very Wide Band (TM-VWB) pulsed transmission technique. The TMVWB transmission is very difficult to detect or intercept, using RF detectors and other conventional sweeping techniques. This unique transmission technique also drastically reduces power consumption. The operating battery life of the Model 6206 T is over 30 times longer than conventional transmitters with the same peak output power level.

The characteristics of the system, including low probability of interception, high audio quality, micro-miniature size and extremely low transmitter power consumption, make the Model 6206 system ideal for both short- and long-term concealment installations.

Wide selections of complementary equipment provide many deployment options and increase the versatility and reliability of the Model 6206 system. An example is the ability to re-launch the signal over the cellular network which provides unlimited operating range.



Covert Audio Surveillance System

Model 6206

MODEL 6206 T

Micro transmitter – radiofrequency transmitter with microphone for concealment near the target. Very small and compact, the extremely low power consumption allows for extended operational time without human intervention.

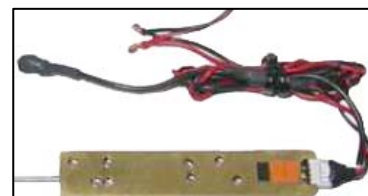
Range	330÷390 MHz
Power supply	4÷12 V
Consumption	0.8÷1.5 Ma
Output power	10÷200 mW
Audio dynamic range	60 dB
Audio bandwidth, -3dB	50 Hz ÷ 8 KHz
Dimensions (mm)	33 x 10 x 3



MODEL 6206 HPT

High Power Transmitter - radiofrequency transmitter with microphone for concealment near the target. Because of the internal power booster, this transmitter is capable of increased output power. This system provides a solution to applications where longer distances to the receiving equipment are required and repeaters are not practical. The Model 6206 T HP maintains the same characteristics of the standard Model 6206 T including lower power consumption and high quality audio.

Range	330÷390 MHz
Power supply	6÷12 V
Consumption	4÷14 mA
Output power	60÷600 mW
Audio dynamic range	60 dB
Audio bandwidth, -3dB	50 Hz ÷ 8 KHz
Dimensions (mm)	65 X 13 X 6



MODEL 6206 RECEIVER

Receiver – dedicated receiver for either micro transmitter.

Range	330÷390 MHz
Power supply	8÷14 V
Consumption	36 mA
Audio level output	200 mVpp
Audio bandwidth, -3dB	50 Hz ÷ 10 KHz
Sensitivity	-90 dBm
Dimensions (mm)	73 X 45 X 10



Covert Audio Surveillance System

Model 6206

MODEL 6206 PROGRAMMABLE RECEIVER

Adjustable Frequency Receiver – receiver used with the Model 6206 GSM Repeater and Model 6206 Ponte (See below). Also compatible with Model 6206 DS and DSP.

Range	300÷399.90 MHz
Power supply	8÷14 V
Consumption	50 mA
Audio level output	200 mVpp
Audio bandwidth, -3dB	50 Hz ÷ 10 KHz
Sensitivity	-90 dBm
Dimensions (mm)	73 X 45 X 10



MODEL 6206 DS

Local Listening Base – docking station for either the Model 6206 Receiver or programmable receiver connections for the headphones, recorder and phone line are provided. Real-time monitoring with headphones or unattended operation utilizing the VOX control and recorder allow for flexibility in its use that can handle practically any situation.

External power supply	from 100 to 240 V ac/12 V dc
Internal power supply	1.5 Ah rechargeable batteries
Front panel meter, switch selectable	RSSI (dBm) – B.F. (mV) Vlin. (v)
Recording level	external adjustment
VOX level	external adjustment
Audio outputs	earphone and recorder jack
Internal voltage booster	28 V out
B.F. generator	1 V p.e.p. out
Dimensions (mm)	130 x 90 x 40



MODEL 6206 PONTE

RF Repeater – Using the Modulo F Set tuned to the frequency of the micro-transmitter, the Model 6206 Ponte extends the range of the transmission.

Power supply	9÷24 V
Consumption	< 80 mA
Output power	1 W
RX sensitivity	-90 dBm
Dimensions (mm)	80 x 58 x 27



Covert Audio Surveillance System

Model 6206

MODEL 6206 DSP

Local listening base with DSP – functionally the same as the Model 6206 DS, the 6206 DSP adds a DSP filter to significantly reduce background noise.

External power supply	from 100 to 240 V ac/12 V dc
Internal power supply	1.5 Ah rechargeable batteries
DSP	4 Steps of noise reduction
Front panel meter, switch selectable	RSSI (dBm) – B.F. (mV) Vlin. (v)
Recording level	external adjustment
VOX level	external adjustment
Audio outputs	earphone and recorder jack
Internal voltage booster	28 V out
B.F. generator	1 V p.e.p. out
Dimensions (mm)	130 x 90 x 40



MODEL 6206 SERVER

Phone Line Interface - using the Model 6206 Receiver the Model 6206 Server re-launches the received audio through a dedicated phone line.

Power supply	18÷60V
Audio output level	2 Vpp max.
Level adjustment	external by screwdriver
Line Isolation	>20 M Ohm towards the box
Dimensions (mm)	80 x 58 x 27



MODEL 6206 GSM REPEATER

Re-launch over the cellular network – using the programmable receiver the Model 6206 GSM Repeater can re-launch the received audio from either the Model 6206 T or the Model 6206 HPT over the cellular network. There are many functions that can be programmed, including automatic re-launch when events are detected. Programming is accomplished using DTMF tones.

Audio selection	microtransmitter: Model 6206T/Model 6206 T HP auxiliary microphones
VOX sensitivity	10 levels
F set Module	Frequency range: 300÷399.9. MHz step: 100 KHz
Power supply	6÷36 V
Transmission consumption	250 mA @ 12 V
Dimensions (mm)	123 x 64 x 30



Multi Room Monitoring Via Telephone Lines

Model 4004

The Model 4004 Wired Room Monitoring System is a highly professional system designed for remote monitoring where full transmitter control via standard PSTN lines is needed.

Model 4004 is designed to allow the user to install up to 8 transmitters, using a combination of active phone lines or spare wires and mains lines.

The individual transmitters can be switched on and off remotely.

The modular Model 4004 system consists of transmitter(s), one receiver module, PSTN modules and of control software for PC.



Transmitters

The Model 4004 transmitters incorporate the following advanced features: scrambler, AGC and remote control receiver.

The remote controlled functions of the transmitters are power on/off and scrambler on/off.

Two different types of transmitters have been developed for the Model 4004 system. The Model 4004 Wired Monitoring transmitter (HWM) is to be used on active phone lines or spare wires. The Model 4004 Carrier Current transmitter (HCC) is to be used on active mains lines.

RECEIVER SYSTEM

The RX module is a small, flat and compact cabinet, which is only 44 mm high. One RX module handles 2 transmitters simultaneously.

The RX module has the following features:

- Target line interface for both PSTN and spare wires (HWM) and mains wires (HCC)
- Dual tuner - each with 4 channels
- High impedant input for LF audio. Enables monitoring of PSTN line without transmitter
- Audio descrambler
- Remote control of transmitters
- Noise masking for HWM transmitters
- Line output for recording
- Output for headphones

It is possible to have both HWM and HCC transmitters operating at the same time, enabling the operator to monitor, for example, one HWM transmitter and one HCC transmitter simultaneously.

The RX module is powered from an external low voltage source. The RX module is delivered with a mains adapter, but can also be powered from a car battery.

Multi Room Monitoring Via Telephone Lines

Model 4004

PSTN MODULE – REMOTE SET-UP

The PSTN module provides a link from the listening post to the monitoring site. One PSTN module is needed at the monitoring site and one at the listening post. The PSTN module can handle 2 lines simultaneously and transfers both the audio from the transmitter and the remote control commands.

The PSTN module at the monitoring site can also be dialed up from standard telephone equipment, including mobile phones. Access to the system is done by means of the telephone keypad. This feature enables the operator to make a quick control of the TX / RX / PSTN set-up.

The PSTN module is very easy to install – it is connected to the receiver via one single cable, containing all the required signals and power.

CONTROL SOFTWARE

All facilities in the Model 4004 system can be software controlled via a PC. The control set-up can be provided by connecting the control PC directly to the receiver module or to the local PSTN module at the listening post.

APPLICATIONS

Model 4004 is ideal for operations requiring:

- Single room monitoring
- Multi-location room monitoring
- Phone lines, spare wires and mains lines
- Local set-up
- Remote set-up
- Undercover “black-box” set-up

FEATURES

- 4 active transmitter channels
- High audio quality

- Small size transmitters
- Audio scrambling
- Remote control of transmitters
- PSTN module for link of intercepted audio to remote listening post
- Current re-injection on phone lines for system security
- Small “black-box” receiver unit
- Control of software via PC
- Easy to install
- Easy to use



Multi Room Monitoring Via Telephone Lines

Model 4004

SPECIFICATIONS

RX module	Number of channels	4
	Frequency range	110-240 kHz
	Sensitivity	10 dBuV / 20 dB SINAD
	Number of built-in tuners	2
	Modulation	FM
	Remote control transmitter	28 kHz, OOK
	Serial interface to PC / PSTN module	RS-232
	Power source	7-11 VAC or 10-15 VDC
	Dimension (HxWxD)	44x130x164 mm / 1.7x5.1x6.5 inches
Transmitters General data	Number of channels	4
	Frequency range	110-240 kHz
	Type of modulation	FM
	Audio scrambling	Frequency inversion
	Remote controllable	Yes
	Packing	Shrink tube, black
HWM specific data	Transmitted power	50 mVRMS into 100 Ω
	Line voltage range	6-80 VDC
	Dimensions (HxWxD)	Approx. 7.5x32x20 mm / 0.3x1.3x0.8 inches
HCC specific data	Transmitted power	500 mVRMS into 2 Ω
	Mains voltage range	85-265 VAC
	Dimensions (HxWxD)	Approx. 15x35x23 mm / 0.6x1.4x0.9 inches
PSTN module – Remote set-up	PSTN interface	Global compliant, SW controlled
	Number of PSTN lines	2
	Data mode	FSK / DTMF
	Tape control	VOX controlled, adjustable from PC SW
	Serial interface to PC / RX module	RS-232
	Dimension (HxWxD)	44x130x84 mm / 1.7x5.1x3.3 inches

Audio Monitoring Via Power Lines

Model 4005

FEATURES

- Micro-size FM transmitter
- FM/PLL signal transmission
- Parametric equalizer
- Scrambled model available
- Long range
- Proven technology
- Smart VOX with noise cancellation



OPTIONS

STANDARD TRANSMITTER MODEL 4005-TXS

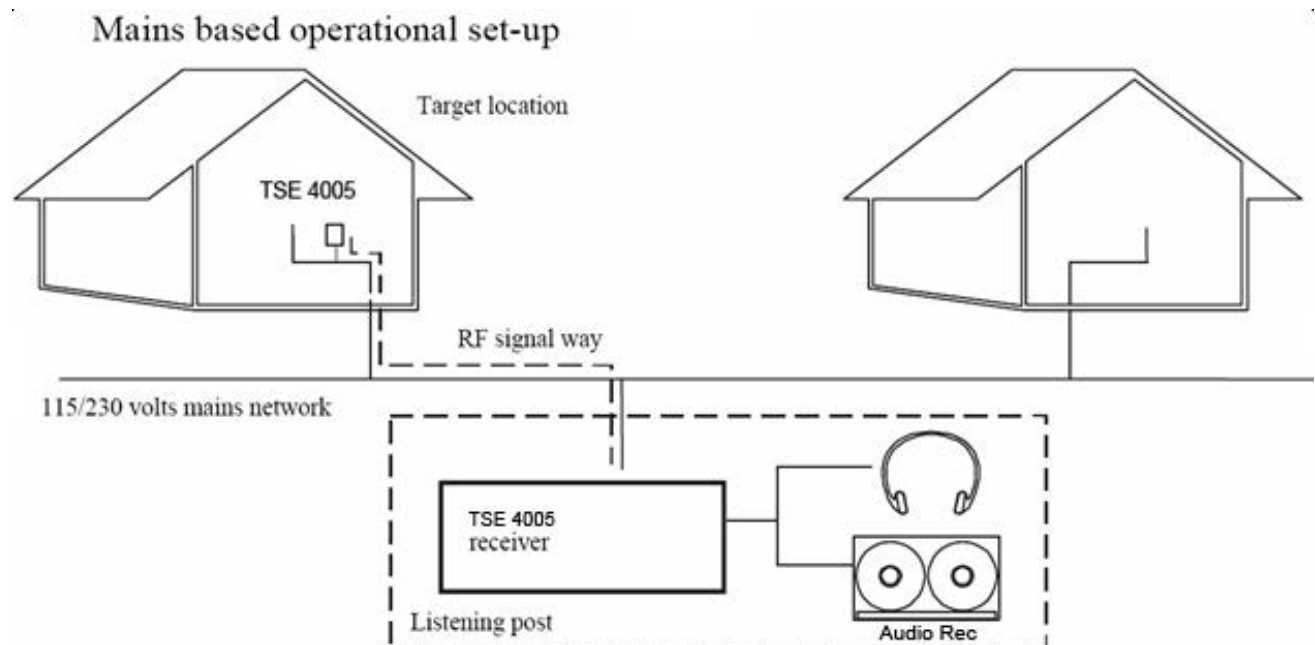
Model 4005-TXS is the standard micro transmitter module with onboard audio circuits.

EXTENDED MICROPHONE MODEL 4005-TXR

Model 4005-TXR is a module where the miniature microphone element is separated from the transmitter board and mounted on 2 meters of wire, making counter-measure detection extremely difficult.

SCRAMBLED MODULE MODEL 4005-TXS-S AND MODEL 4005-TXR-S

In order to maintain a low probability of detection and to counter casual interception, We have designed a micro-sized circuit for scrambling intelligence audio with minor degrading of the audio quality.



Audio Monitoring Via Power Lines

Model 4005

TECHNICAL SPECIFICATIONS

RECEIVER MODEL 4005-RX	
Carrier frequency to be specified by customer or standard	140 kHz +/- 500 Hz
Sensitivity (fmod. = 1 kHz, deviation +/- 3 kHz)	- 82 dBm at 20 dB S/N
Sensitivity (fmod. = 1 kHz, deviation +/- 3 kHz)	- 48 dBm at 50 dB S/N
Selectivity - 30 dB	+/- 20.65 kHz.
Common mode rejection	70 dB
AM rejection (Vin = - 20 dBm, AMmod = 30 %)	40 dB.
Distortion (Vin = - 20 dBm, deviation = +/- 3 kHz)	0.55 %, 1 kHz
Input impedance	275 ohm
Audio frequency response - 3 dB (line out)	300 Hz to 5 kHz
Output voltage line out (deviation = +/- 3 kHz)	700 mV (no load)
Output voltage tel. out (deviation = +/- 3 kHz)	230 mV (600 ohm load)
Output impedance tel. out	600 ohm
Output impedance line out	1 kohm
Output impedance headphones out	47 ohm
Parametric equalizer frequency adjustment range	100 Hz to 10 kHz
Parametric equalizer Q adjustment range	0.4 to 4 kHz
Parametric equalizer gain adjustment range	+/- 15 dB
Meter range RF level	- 80 to -20 dBm
Power supply	115 / 230 VAC (50 - 60 Hz)
Dimensions	265 x 255 x 82 mm / 10.43 x 10.04 x 3.23 inches
Weight	2.8 Kg. / 6.17 lbs.

Audio Monitoring Via Power Lines

Model 4005

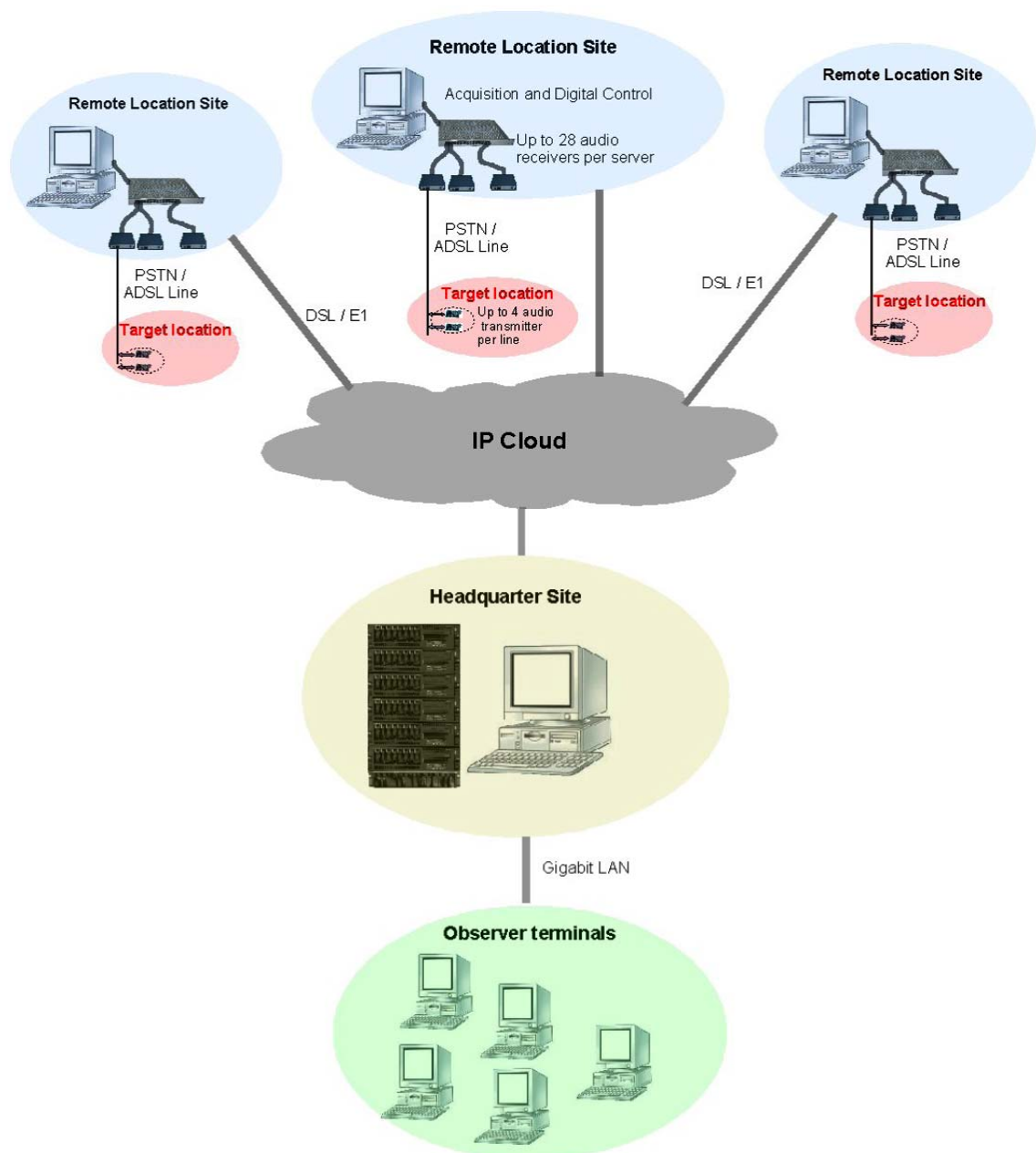
TRANSMITTER MODEL 4005-TXS	
Carrier frequency	140 kHz +/- 500 Hz
Output impedance	10 ohm
Output voltage (140 kHz sine)	500 mV RMS into 10 ohm.
Max. modulation	+/- 5 kHz
Frequency response	150 Hz to 3.5 kHz - 3 dB
Current consumption	3 mA DC
Audio amplifier AGC range	< 66 dB
Microphone vibration sensitivity	< 66 dB
Dimensions Model 4005-TXS	42 x 22 x 12 mm / 1.65 x 0.86 x 0.47 inches
Dimensions Model 4005-TXR	14 x 9 x 7 mm / 0.55 x 0.35 x 0.27 inches
	42 x 22 x 12 mm / 1.65 x 0.86 x 0.47 inches
Dimensions Model 4005-TXS-S	14 x 9 x 7 mm / 0.55 x 0.35 x 0.27 inches
	42 x 22 x 12 mm / 1.65 x 0.86 x 0.47 inches
	35 x 12 x 4 mm / 1.37 x 0.47 x 0.16 inches
Dimensions Model 4005-TXR-S	14 x 9 x 7 mm / 0.55 x 0.35 x 0.27 inches
	42 x 22 x 12 mm / 1.65 x 0.86 x 0.47 inches
	35 x 12 x 4 mm / 1.37 x 0.47 x 0.16 inches

Audio Surveillance Network

Model 4020

1 PRODUCT DESCRIPTION

Audio Surveillance Network (ASN) is a complete solution for law enforcement agencies to collect, transmit, store and analyze audio coming from distant targets at a centralized location. ASN consists of both hardware and software elements suitable for building a countrywide audio surveillance system, or to conduct stand-alone tactical operations. A typical ASN layout consists of various target locations, remote location sites, a central headquarters and a set of observer terminals.



Audio Surveillance Network

Model 4020

Audio is captured from a target location by audio transmitters containing tiny microphones, and transferred to the remote location site over a telephone line. Usually, a remote location site exists near a location exchange. It contains a large bank of receivers to collect audio from various target locations. The received audio channels are digitized and stored in a remote location server. The audio data is sent to the headquarters using a DSL or E1 link. The headquarters stores digital audio coming from a number of remote locations in a huge database. Observer terminals access the headquarters database using custom written audio surveillance software. An ActiveX based audio player offers audio analysis capability and on-line comment tag submission to the observers. ASN is the only system of its kind that offers real-time audio surveillance from a number of distant targets from beginning to end.

2 SYSTEM ELEMENTS

The Following system elements have been developed to build an ASN.

TARGET LOCATION

- Xad Audio Transmitter (XTL-ATx)

REMOTE LOCATION SITE

- Xad Audio Receiver (XKL-ARx)
- Xad Audio Acquisition Platform (XRL-ACQ)
- Xad Remote Location Server (XRL-SER)
- Xad Remote Location Software (XRL-SW)

HEADQUARTERS

- Xad Headquarter server (XHQ-SER)
- Xad Headquarter Software (XHQ-SW)

2.1 AUDIO TRANSMITTERS (XRL-ATX)

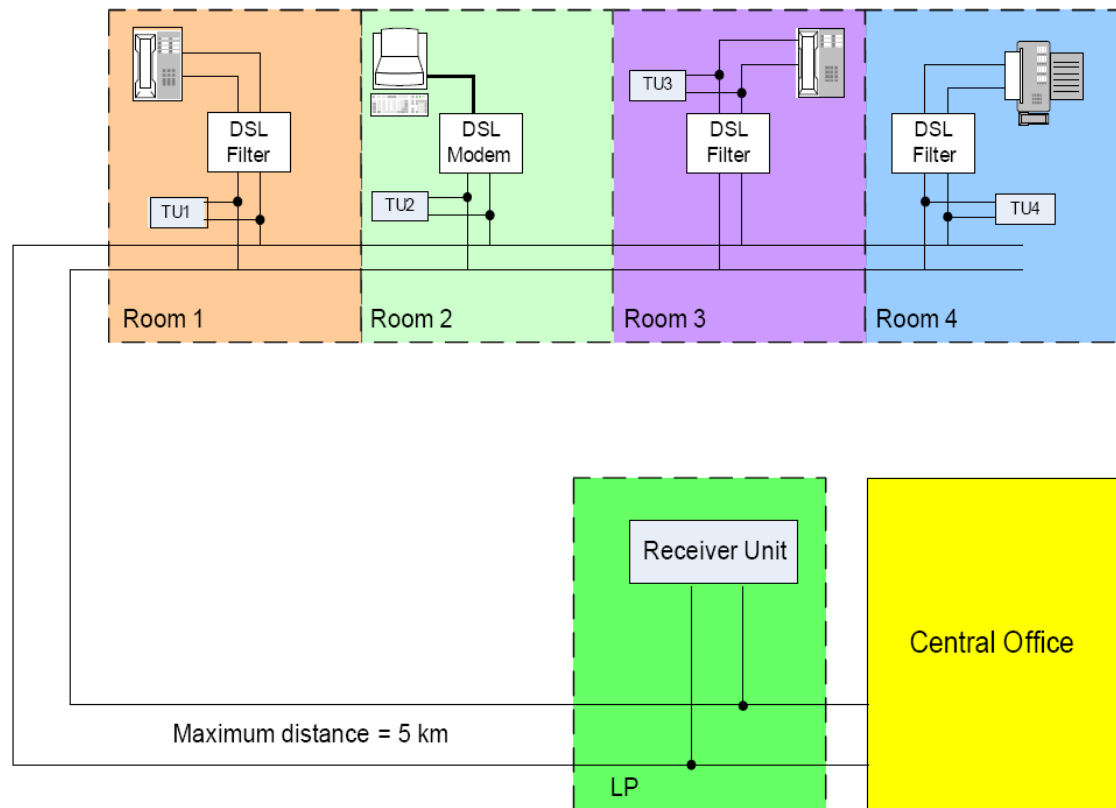
Audio is collected from the target location using Audio Transmitters (XTL-ATx). Each transmitter contains a high gain, sensitive microphone. It is installed on the target line irrespective of the location and polarity. The installation does not interfere with the normal operation of telephone equipment. XTL-ATx comes in two versions – XRL-ATP works with standard POTS, while XRL-ATA is designed for ADSL enabled telephone lines. For major operations, up to four XRL-ATx units can be deployed per target. A user can remotely activate the desired XRL-ATx leaving the others in standby mode.

Each XRL-ATx has built-in intelligence to sense the line status and start-stop its operation independent of the user intervention. Salient features of an XRL-ATx are listed below:

- Small size 16 x 9 mm
- Low current consumption (active 4mA, standby 4μA)
- High gain microphone 48 dB
- Polarity free installation
- Seamless operations on PSTN and ADSL enabled lines
- Automatic start-stop and mute functions
- Choice of 4 transmitters per line

Audio Surveillance Network

Model 4020



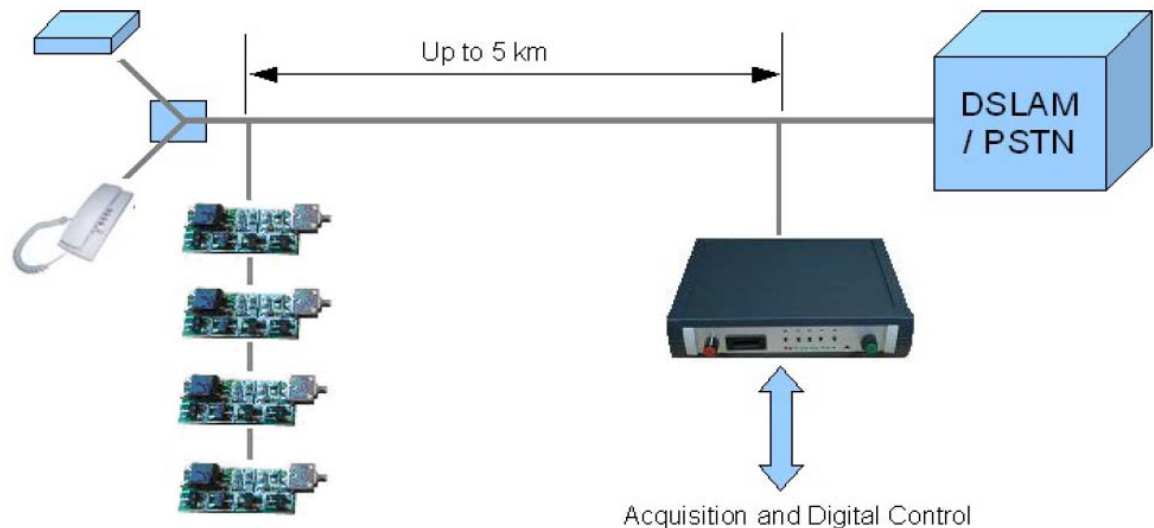
2.2 AUDIO RECEIVER (XRLS-ARX)

Audio Receiver (XRLS-ARx) is a very low noise state-of-the-art receiver to extract clear audio signals from noisy telephone lines at a distance of 5 Km from the target location. XRLS-ARx outputs receive audio to the headquarters and phono sockets. There are manual control buttons on the XRLS-ARx to switch between multi-transmitter installations or mute all, if required. XRLS-ARx also provides a digital interface which is used to control XRLS-ARx from the headquarter's software. Main features of XRLS-ARx are listed below:

- Transparent operations on PSTN and ADSL enabled lines
- Standalone and network operation
- Automatic voltage control
- Manual button control for standalone operations
- Digital control interface
- Logic circuitry to control up to 4 audio transmitters
- Built-in digital voltmeter
- Audio Vu-meter
- Automatic volume control
- Phono socket
- Headphone socket

Audio Surveillance Network

Model 4020



2.3 AUDIO ACQUISITION PLATFORM (XRLS-ACQ)

The Audio Acquisition Platform (XRLS-ACQ) is a 1U height 19 inch rack mount unit. It consists of a custom built PCB to acquire, digitize and transfer 28 audio channels to a Remote Location Server (XRLS-SER)



ACQ uses four 8-bit analog to digital converters to digitize the audio channels. The digital audio samples are buffered before sending them to XRLS-SER using a USB 2.0 interface. Main features of the XRLS-ACQ platform are listed below:

- 19 inch rack mountable casing
- Parallel A/D conversion of 28 analog audio channels
- 64KB buffer memory to ensure data continuity
- High speed data transfer using USB2 interface
- Integrated interface for audio and transmitter control using RJ45 ports
- Acquisition status display

Audio Surveillance Network

Model 4020

2.4 XAD REMOTE LOCATION SERVER (XRLS-SER)

The Remote Location Server (XRLS-SER) is a powerful machine built with 64 bit AMD 2.0GHz dual core processor and Linux operating system. The industrial PC casing with front and rear fan support provides ruggedness to operate in extreme temperatures expected at a remote location site. The remote location server is lockable at the front providing extra security to the system.



2.5 REMOTE LOCATION SERVER SOFTWARE (XRLS-SW)

The remote location server software (XRLS-SW) runs on XRLS-SER and controls the main functionality of a remote location site. It is written in C++ under a Linux operating system. For security reasons, a user interface has not been built in the remote location software. The remote location operator uses a console window to execute commands for each task. Main features of XRLS-SW are listed below:

- Command line interface for added security and reliability
- Security database installation without user interaction
- Built under Linux for easy integration, faster speed and stability
- Database storage for systematic archiving of audio streams
- Automatic audio acquisition and uploading according to the headquarters schedule
- Thread based real-time audio encoding and uploading
- Local audio offload option for emergency
- Segmentation of audio streams into packets for quick transmission
- Synchronized time stamping of audio data cross the ASN
- Lossless compression of audio data for integrity and completeness
- Remote control of attached audio devices from the HQ software
- Password protection, activity logging and secure reporting to HQ software
- Memory management and automatic deletion of contents
- Separate audio device set-up and local testing utility

TRANSMISSION HARDWARE

The requirement for transmission hardware (E1 routers, DSL and related components) may differ in each case. Depending upon the requirement, we can specify the transmission hardware to be used in an ASN.

Audio Surveillance Network

Model 4020

2.6 HEADQUARTER SERVERS (XHQ-SER)

The HQ is the main control center of the ASN. It is connected to remote location sites in a star network topology. The XHQ-SER comprises two database servers, a storage server, and an application server. The database servers are similar in specification to XRLS servers. The storage configuration is tailored according to the requirements. To build redundancy, the database servers are connected to the storage server in cluster configuration. The application server is an apache based server, which hosts web-based HQ server software. It allows the observer terminal to access the huge audio database.

2.7 HEADQUARTER SERVER SOFTWARE (XHQ-SW)

The headquarter server software (XHQ-SW) provides the main control of the ASN. XHQ-SW software is accessed by the Microsoft Internet Explorer through a Web-based environment. The complex system information remains hidden behind a user friendly graphical user interface (GUI). All the software pages are interconnected. A user can navigate across them using a dynamic menu bar. The menu items vary according to the user access privileges.

The main features of the XHQ-SF are listed below:

- Secure login feature with individual access rights
- Personalized home page portal for each user
- Easy and dynamic remote location site creation
- Site and target location based user access
- Hierarchical user and group management structure
- Entity based access rights and on the fly user creation
- Automatic information update across the network
- Time, tag and target based audio content search
- ActiveX based audio player with audio range control
- Custom audio play list with forward/backward audio search options
- Real-time audio access and analyze feature
- Observer comment tagging and retrieval
- Audio save option for privileged users
- Automatic e-mail feature within the groups
- Audio transmitter control for each remote location site
- Network site status reporting
- Advanced audio download scheduler for target locations
- Activity log and reporting

2.8 OBSERVER TERMINALS (OT)

Observer Terminals are standard PCs connected to the HQ server in an intra net configuration. They access XHQ-SW to access and listen to audio records stored in the HQ database. ASN setup does not require an installation of the client software. Updates are automatically reflected to the observer terminals when XHQ-SW is updated on the headquarter application server.

Universal GSM Modules

Model 4029

UNIVERSAL GSM MODULE

The Model 4029 Universal GSM module is a multiple function remote controller and surveillance device. The unit can be controlled by DTMF tones over the GSM network and be used as an audio repeater at the same time.

The Universal GSM module can be dialed up from any telephone on the public telephone network.

FEATURES

- Both the GSM module and external equipment can be controlled by DTMF tones through the GSM network.
- Two line outputs and two line inputs are available for controlling and listening to external equipment, such as the Model 6202-1 Receiver.
- To control other external equipment, the Universal GSM module also has an internal 3-pin relay and an internal 12 VDC, 00 mA supply source, controllable via DTMF tones.
- An audio input for our MPA (Microphone Pre-Amplifier) is available.
- A Target PSTN input (POTS) for monitoring of phone lines is available.
- A Sense input activated by a high or low level can call a preprogrammed phone number.
- The module is prepared for RS232 and Model 6006S On/Off commands trough the RJ45 connector.



FEATURES CONTINUED

- The GSM dial-in can be protected by a pin code or by preloading up to eight phone numbers that are allowed to call the modem
- The module can be set into VOX mode that will make the unit dial out automatically when the audio level on any of the two line inputs, MPA and PSTN is above a certain level for a specified amount of time. If the VOX function is activated, a preprogrammed phone number can be dialed automatically, the 12 VDC turned on or the internal relay can be switched
- The module has an alarm handler. If the alarm function is activated, a pre-programmed phone number can be dialed automatically, the 12 VDC turned on or the internal relay can be switched
- The module is also prepared for sending SMS during alarm handling

Universal GSM Modules

Model 4029

- All settings can be adjusted by the supplied PC set-up program. Functionalities can be changed or added by uploading new firmware
- The Universal GSM module comes as default with two antennas: one portable antenna and one discreet car antenna

TECHNICAL SPECIFICATIONS

Power requirements	Externally powered
DC input range	3.6 – 15 V
Power consumption leveling for max power save/control	By e.g. the WAVECOM Wireless CPU Module Q2686
Power consumption max, Active	TBD
Power consumption max, Standby	TBD
Internal rechargeable backup battery	3.7V Li-Po with 2100 mAh.
GSM Bands	850/900/1800/1900 MHz
Audio Input output level	0 dB, 775 mV, adjustable
ADC	10 bit
SIM Card Interface	3V / 1.8V
Relays (In general)	30 VDC, 1A
Antenna	SMA connector
USB	Mini USB
Control (RS232/Relay1)	RJ45
Sense in	2 way screw terminals
Relay 2	3 way screw terminals
12 VDC/100 mA out	2 way screw Terminals
Target PSTN (POTS in)	2 way screw Terminals
Line in/Line out/MPA	Mini jack 3.5mm
Power	2.1mm DC Connector
Dimensions (H x W x D)	29 x 105.4 x 80 mm