

**Right solution for a more effective protection  
of private, business and public buildings**

**ALARM TRANSMISSION AND LINE SUPERVISION  
OVER INTERNET**

# ALARM TRANSMISSION OVER INTERNET

## The development trends of technical protection

are increasingly becoming Internet-oriented. For this reason our company **GLOBTEL** has developed its own application for transfer and control alarm data transfer over the Internet. Until now, the alarm signal transfer to the monitoring center has been most frequently performed over classic PSTN telephone lines or GSM networks, known to have certain disadvantages decreasing reliability and quality of the connection to the secured building.

**IP\_SEC (IP Security)** system eliminates these flaws. It performs two basic functions:

- | **Alarm signal transfer** from the alarm control panel at the secured building to the monitoring center over the Internet and
- | **Constant control over the connection** between the secured building and the monitoring center.

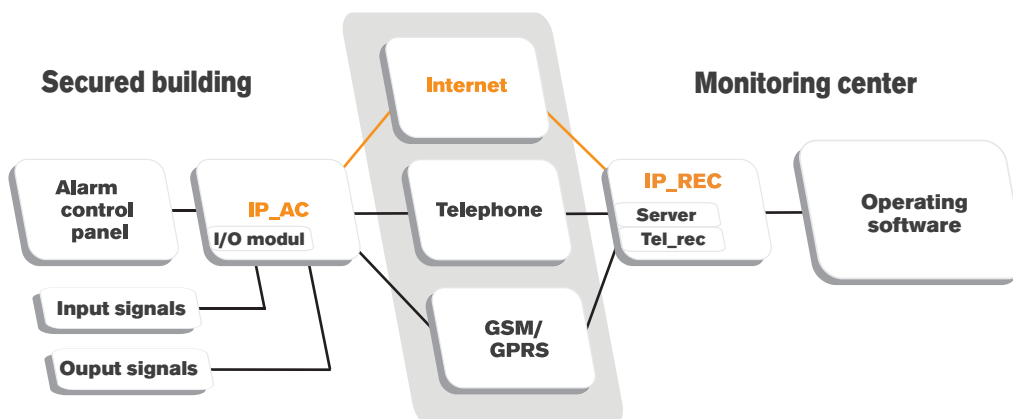
There is also an alternative function, designed for higher reliability and false alarm reduction:

- | **Alternative alarm signal transfer** over telephone lines and/or GSM (GPRS) networks.

### The **IP\_SEC** system consists of two components:

The **IP\_AC interface (IP Alarm Communicator)** is a communication device enabling alarm signal transfer from the alarm control panel over the IP network (ADSL, cable, wireless...) and at the same time using the possibility of transfer over standard telephone lines and GSM (GPRS) networks as backups.

A receiver unit called **IP\_REC (IP Receiver)** is installed at the monitoring center enabling alarm signal reception, control over the connection to the secured building and communication with the operating software the monitoring center.



The **IP\_SEC** system, a system for alarm message transfer over the Internet, is designed for general use (natural persons, small companies...) as well as for more demanding users (financial and national institutions, shopping centers...).

# ALARM TRANSMISSION OVER INTERNET

## How does it work

### Transmitting alarm over Internet and backup networks

Once the alarm goes off at the secured building, the **IP\_AC interface** seizes it, reads the **CONTACT-ID** information (additionally it can be adapted to any other alarm protocol), reformats it into an IP package and sends the package over the IP network to the monitoring center.

The signals received by the Input/Output module (which is connected to the IP\_AC module) can be handled at the same way as alarm signals.

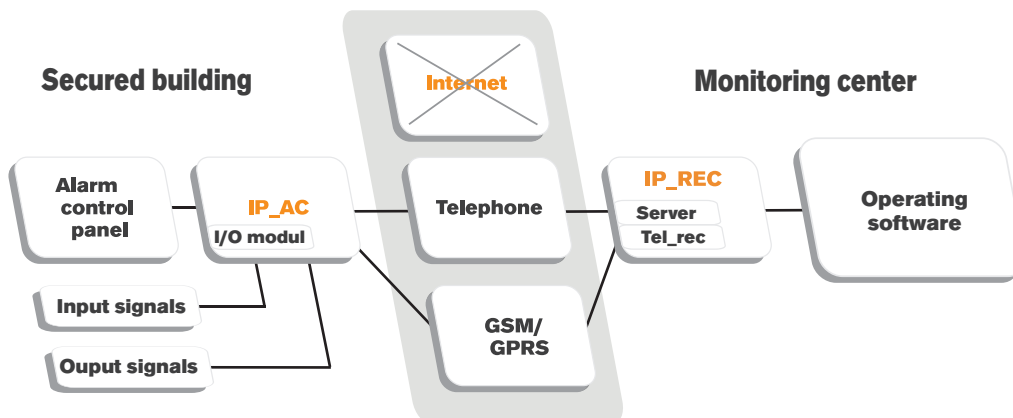
There is an alarm receiver called **IP\_REC** installed in the monitoring center enabling alarm signal reception and control over the connection to the secured building over the Internet.

Data transfer takes about one second and does not exceed 70 bytes, a size which does not slow down the Internet connection at the secured building or at the monitoring center.

The capacity of a ping coming from the receiver and being send back is a little over 30 bytes which also does not slow down the Internet connection.

### What happens when Internet connection is off?

If the Internet connection at the secured building is disconnected, an alarm goes off at the monitoring center. The disconnection is also detected by the **IP\_AC interface** which tries to transmit the event over the telephone line or GSM (GPRS) network (secondary transfer can be prioritized - telephone line or GSM network). If the secondary connections are disconnected as well, an alarm of general disconnection with the secured building is sent to the monitoring software by the **IP\_REC receiver**.



**What is the most important is that the monitoring center keeps CONSTANT CONTROL OVER THE OPERATION OF THE INTERNET LINE at the secured building. The receiver and the interface constantly check their connection in preset adjustable intervals (pings).**

# ALARM TRANSMISSION OVER INTERNET

## IP\_AC (IP Alarm Communicator)



IP\_AC with GSM module



I/O module

### The IP\_AC interface performs two functions:

- Transfer alarms or any other messages over the Internet, PSTN line or GSM networks.
- Acts as an IP communicator, designed for the control over the data transport path between the secured building and the monitoring center.

The **IP\_AC interface** is connected between the alarm control panel and the telephone line on one side and to the Internet on the other side. Once the alarm at the secured building goes off, the interface seizes it, reads the information, reformats it into an IP package and sends it over the IP network to the monitoring center.

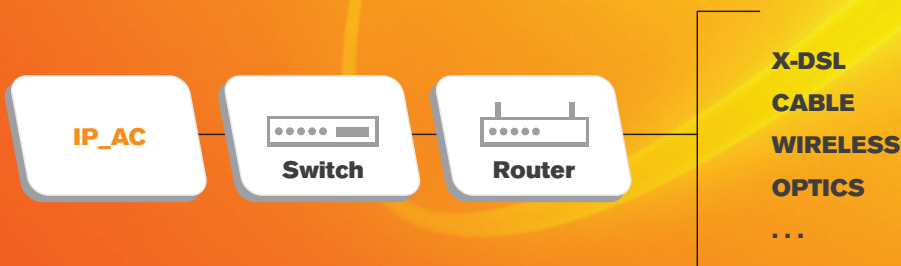
The **IP\_AC interface** can in the same way also send any kind of signals coming from Input/Output module connected to the interface.

### The purpose and operation conditions

The **IP\_AC interface** is designed for all the existing as well as new legal entities and natural persons having a contract with the monitoring center and a 24-hour access to broadband services (ADSL, cable, wireless...). The user must ensure a constant supply of electricity from the alarm device to the Internet access point (switch, hub, router). Either a static or dynamic (DHCP) IP address can be used.

The **IP\_AC interface** has an additional function ensuring its wider applicability. It enables additional Input/Output connection assuring all kind of signals to be send from the secured building side to the monitoring centre.

Due to use of the **CONTACT\_ID** protocol for alarm transfer over the Internet, supported by most alarm control panels, the IP\_AC interface is compatible with alarm control panels of most manufacturers.



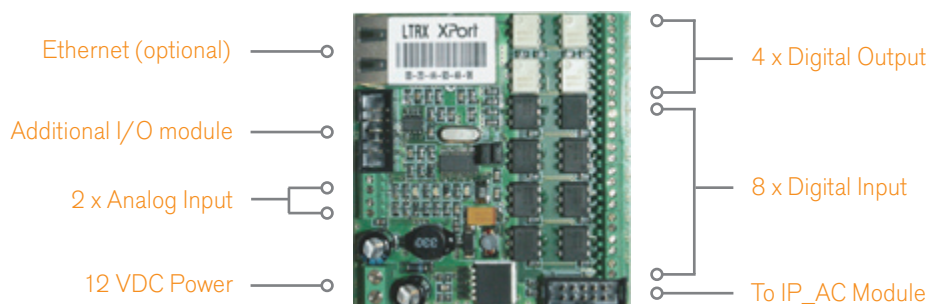
# ALARM TRANSMISSION OVER INTERNET

## IP\_AC (IP Alarm Communicator)

### IP\_AC module connection plan



### I/O module connection plan



Technical data	IP_AC 2.0 module	I/O module
Nominal voltage:	10 - 15 VDC	10 - 15 VDC
Current:		
Idle:	150 mA	150 mA
Peak:	150/700* mA	150 mA
Dimensions:	124 x 73 x 17/23* mm	69 x 73 x 16/17** mm
Weight:	85/105* g	45/60** g
Environment temperature:	0 - 70 °C	0 - 70 °C
Relative humidity:	Max 95%	Max 95%
LAN Connector:	RJ45 female	-
LAN Speed:	10/100 Mbps	-
LAN Protocol:	UDP, TCP/IP, IP, ARP, DHCP	-
Inputs:	Additional I/O module	8 x digital, 2 x analogue
Outputs:	1 x alarm programmable dry contact and Additional I/O module	4 x digital
Type of encryption:	256 bit, AES	-
PSTN:	Line from CP, Line In, Line Out	-

\*with GSM module;

\*\*with XPort

# ALARM TRANSMISSION OVER INTERNET

## IP\_REC (IP Receiver)

The IP\_REC receiver performs three functions.

- ▮ Receives alarm messages coming from the IP\_AC interface.
- ▮ Acts as an IP communicator, designed for the control over the data transport path between the secured building and the monitoring center.
- ▮ Sends the received signals to the control program of the monitoring center.

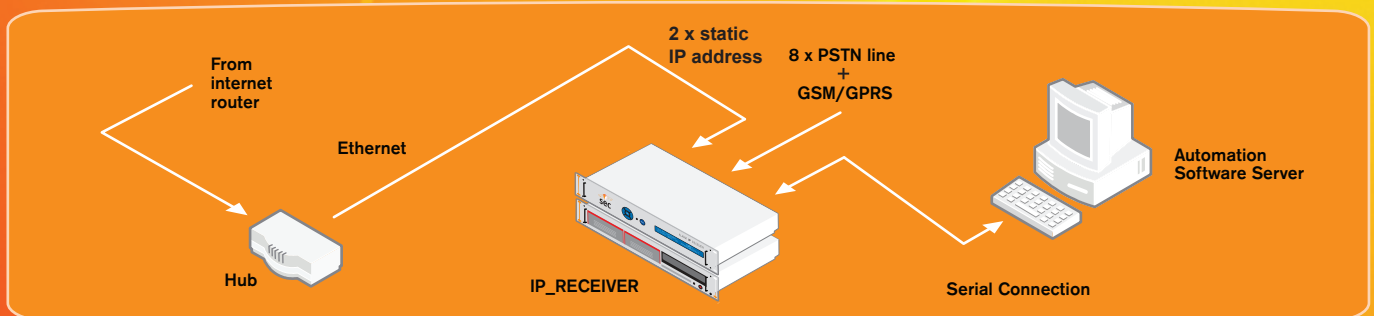


The **IP\_REC receiver** is located at the security control center and is able to receive signals over the Internet as well as over classic PSTN lines (or over GSM networks). Thus the alarm control panels without IP interfaces for signal transfer over the Internet can also be connected to the **IP\_REC receiver** acting then as a classic receiver for signals sent over PSTN or GMS (GPRS) networks.

All the received data, received either over the Internet or other, alternative networks PSTN, GMS and GPRS), is saved in the database and can be managed from any computer connected to the local network. For access to the database, a username and a password are required.

The system also allows the users of the security services to access their own databases (where events from secured building are stored) over the Internet as well as enables sending events over e-mail. This functionality can be configured by the security companies according to user demands.

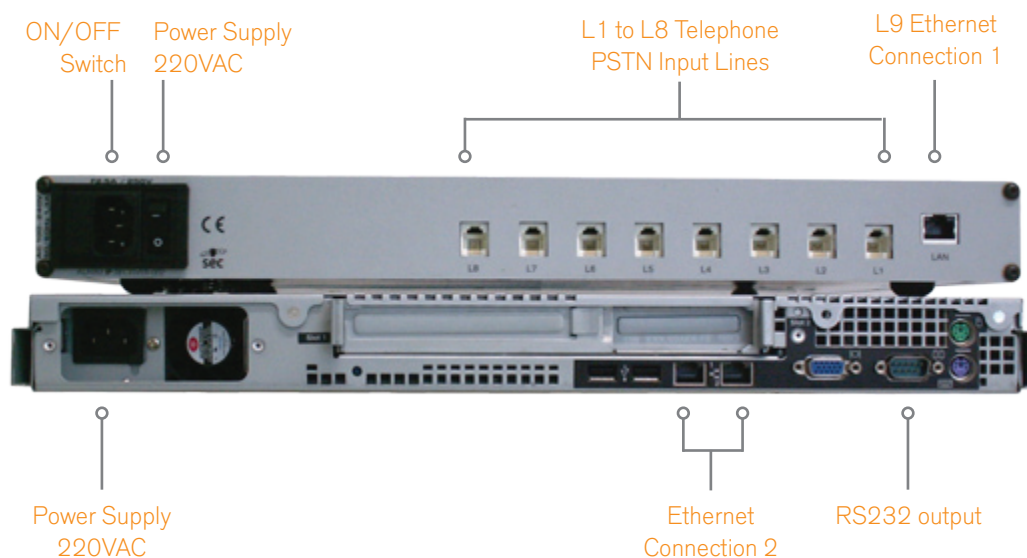
**The function of the IP\_REC receiver is, beside data reception and line supervision, also the transfer of all the received data to the monitoring software. There they are properly archived and displayed on a monitor at the monitoring center.**



# ALARM TRANSMISSION OVER INTERNET

## IP\_REC (IP Receiver)

### IP\_REC 2.0 Receiver connection plan



NOTE: Server connection point vary depending on the server manufacturer.

#### Technical data

##### TEL\_REC 2.0 telephone receiver

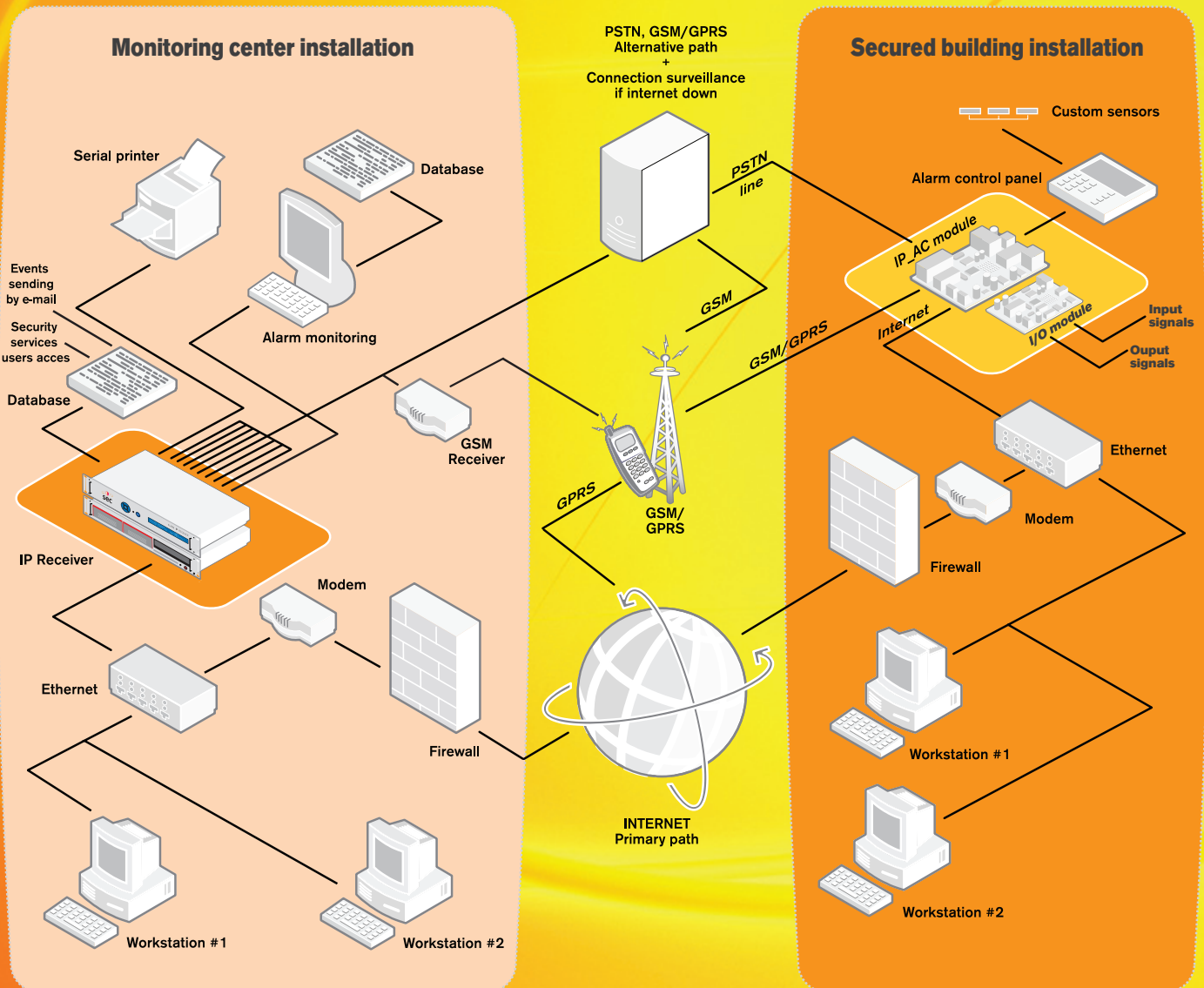
Input voltage:	100 - 240 VAC
Input current:	1,3 A
Input frequency:	50/60 Hz
LAN connector:	RH45 female
LAN Speed:	10/ 100 Mbps
Mount:	19" rack, 1U housing
Dimensions:	523/544 x 482 x 44 mm
Weight:	5,2 kg
Environmental temperature:	0 - 70 °C
Relative humidity:	Max 95%
Inputs:	8 x PSTN
Clients:	Depend on local regulation

##### IP\_REC server part (minimum requirements)

Processor:	Pentium4 or similar
Memory:	RAM 512 Mb
Storage unit:	Hard Drive 80 Gb
Clients:	3.000+(depend on type of protocol used)
Protocols:	IP, ARP, UDP, TCP/IP, HTTP(S), NTP
Type of encryption:	256 bit, AES
Network card:	10/ 100 Mbps, RJ 45
Mount:	19" rack, 1U housing

# ALARM TRANSMISSION OVER INTERNET

## IP\_AC and IP\_REC Installation



### System requirements

#### At the monitoring center side:

- ▮ Appropriate place in rack housing for two 1U units,
- ▮ 220V AC power supply with power backup possibility,
- ▮ Two static IP addresses,
- ▮ 24/7 broadband Internet access,
- ▮ PSTN telephone line.

#### At the secured building side:

- ▮ Existing control panel supporting the Contact-ID protocol or dry contact connection possibility,
- ▮ 12V DC power supply,
- ▮ Static or dynamic IP address,
- ▮ 24/7 broadband Internet access,
- ▮ PSTN telephone line (in case of telephone backup),
- ▮ GSM SIM card with subscription (in case of GSM backup).

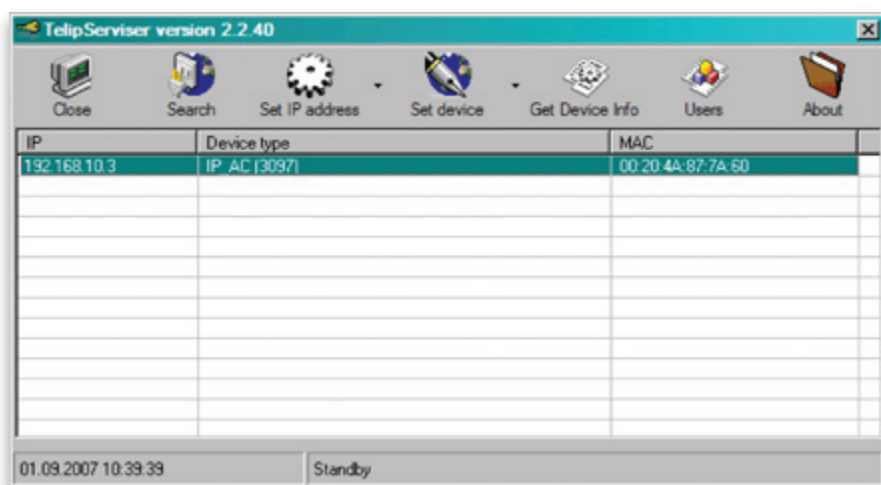
# ALARM TRANSMISSION OVER INTERNET

## Devices programming

### TelipServer

TelipServer is a computer program for configuring the **IP\_REC receiver** and **IP\_AC interface devices**. The IP\_AC represents a group of modules for transferring alarm signals over the Internet to its recipient – IP\_REC Receiver.

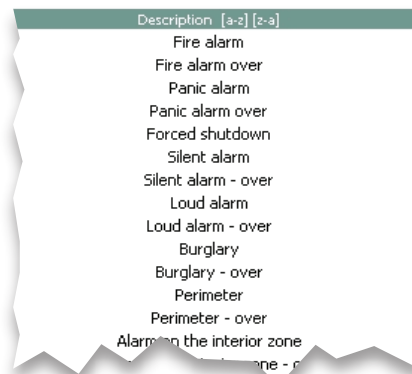
Using TelipServer you can search for devices in a local computer network, set their IP addresses (including DHCP), configure them or check their settings (with few exceptions).



### ControlPanel

The **IP\_SEC system** ControlPanel is a Web based program, designed to configure and review the IP\_SEC security system. You need to log on with a username and password to access to the program. When logged you are allowed to add and remove users, review events and reported errors, manage the system settings, etc.

For a preview of the program we suggest Mozilla Firefox Web browser version 1.5 or higher.



# ALARM TRANSMISSION OVER INTERNET

## Strengths and advantages

### Interface

- | **Higher reliability in transmitting alarms** due to the triple (quadruple) connection: IP connection, telephone line and GSM (GPRS) network. In case of one of these connections being down, the next is chosen according to the prioritized order.
- | **Immediate alarm transfer** to the monitoring center: transfer over a broadband connection takes less than a second.
- | **Control Panel Compatibility:** the IP\_AC interface can be installed in any alarm device supporting the CONTACT\_ID protocol (most alarm devices).
- | **Works over any type of IP networks:** Any local area network (LAN) can support the needs of a few modules. A switched 100Mbps network is desirable and WAN connection with 256 kbps or above of continuous bandwidth is desirable. Module can be used across corporate WANs, VPNs, wireless networks, and broadband connections including ADSL, Cable, SDSL, Nx64, T1, and E1.
- | **Various input signal connectivity:** Different types of signals from any kind of devices can be connected to the IP\_AC's I/O module and transferred to the monitoring center.
- | **Outputs triggering possibility:** Outputs on the IP\_AC's I/O module can be triggered by specific events at the secured objects side or by the commands, send over the Internet.
- | **Interface doesn't need static IP address:** A DHCP address can be used.
- | **Allows the UDP and TCP protocol:** Module allows to be connected over UDP or TCP/IP protocol. With TCP there is no need to forward port at the customer premises, but the receiver can connect to limited number of TCP connections.
- | **Cost-effectiveness.** Sending alarms over an inexpensive network designed for Internet access saves the cost of telephone line transfer.
- | **High level of message encryption** transferred over the Internet (256 bit, AES encryption).
- | **Easy installation and programming** via TelipServer software.

### Receiver

- | **Constant, 24/7 control over the lines:** Signals from the IP\_REC receiver are periodically sent from the monitoring center side to the IP\_AC interface at the secured building side in order to check the proper operation of the line. In case of no return signal, the IP\_REC sends an alarm to the monitoring center. This function prevents sabotage and line faults.
- | **Monitoring of the serial connection** between the IP\_REC and the monitoring centre operating software.
- | **Mediate the events into monitoring centre software** via serial connection using Contact ID protocol or simulate many other protocols like Surgard, Ademco protocols...
- | **User's personal data managing possibility:** Users can access their own databases over the Internet as well as receiving events over e-mail.
- | **Users capacity:** 3.000+ users, depends on TCP/UDP protocol usage.
- | **Internal independent database:** Have its own internal HDD for events storage.
- | **Easy configuration and administration** through any Web accessible ControlPanel software.





