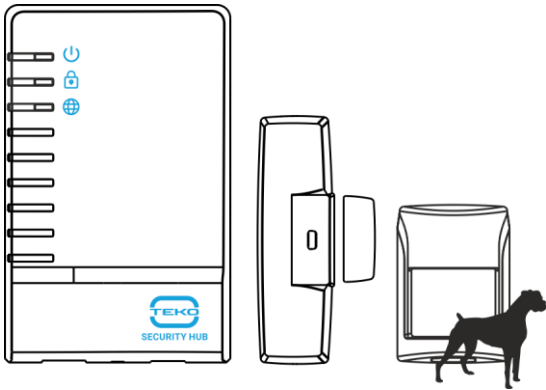# SECURITY HUB KIT

Technical passport

This document is intended for studying the technical characteristics, configuration, operating conditions and warranty conditions for the Security Hub kit (hereinafter referred to as the **kit**).

The manufacturer reserves the right to make changes related to the product improvement without notice. All changes will be made to the new edition of the document.

1 Function

"**Security Hub**" kit is the cloud-based alarm and Smart home system. After installing the application, wiring up the controller and placing the radio detectors from the kit, the user gets a simple alarm system, which can later be expanded by adding compatible devices*.

2 Key information and features

2.1 The kit consists of the on-site **controller "Security Hub"** (hereinafter referred to as the **controller**) with a rechargeable battery, a network adapter with a USB cable, wireless motion detector (pet immune) **Astra-5121** and door opening magnetic contact detector **Astra-3321** with batteries included. The functionality of the kit can be expanded by compatible devices*.

2.2 The controller is configured using a **mobile application Security Hub**. Mobile app uploaded on Google Play and App Store.

2.3 **The controller** provides the exchange of information with Internet applications through the "Security Hub" cloud server:

• via a wired channel, via an RJ45 type connector (Ethernet 10BASE-T) and the provider's network,

• via a wireless channel, via two SIM-cards (GPRS/EDGE) of GSM mobile operators.

The main data exchange channel is hardwired, followed by SIM1, SIM2 by priority.

2.4 The controller communicates with detectors in the frequency range (433.42 ± 0.2%) MHz and supports up to **32 wireless detectors**.

2.5 The configured controller provides:

• work with the server via TCP channel,

• registration (adding) of wireless detectors,

• status processing of wireless detectors,

• processing wireless detectors statuses by the built-in LED indicator and displaying them in the Internet application,

• on-site alarm control via the Mobile application or using iButton/Proximity cards.

• Relay outputs control (relays and "open collectors").

2.6 The controller has a built-in **Touch Memory** (**TM)** input for connecting iButton key reader and/or Astra-KTM-S keypad. TM codes are registered from Mobile applications.

2.7 The hub has 4 pairs of individually programmable terminals **+CON1-**, **+CON2-**, **+CON3-**, **+CON4-**, which can be used in the mode of:

- **inputs** (zones (alarm loops)) for connecting hardwired intrusion or fire type detectors,

- "open collector" **outputs** for connecting sirens.

2.8 The controller has two built-in relays **RELAY1, RELAY2** with modes of operation programmable through mobile applications.

2.9 The controller is powered from 100-230V 50/60Hz mains power network through the network adapter supplied.

2.10 The controller has the possibility to power from external power sources (main and backup) with a nominal voltage of 12 V through the terminals **+12V-** and/or **+12VR-.**

2.11 To ensure power backup inside the controller there is a battery holder and a socket for connecting a lithium-ion (Li-Ion) rechargeable battery (BAT) of the size 2/3 A with a nominal voltage of 3.7 V, capacity of 600 or 700 mA/h (depending on the current complete set).

Notes

1 The connection of the BAT is made immediately <u>before</u> the external power supply to the controller. The controller cannot be started from the BAT.

2 When switching to the BAT power:

- the controller provides communication only via GSM wireless channel;

- the controller does not support operation of hardwired fire detectors.

2.12 The controller has **three** built-in **LED indicators (**see table 1).

2.13 The **Astra-5121** motion detector (pet immune) is designed to detect intrusion into the protected space of an enclosed area, generate an alarm notification and send the notification to the controller via radio. The detector is non-sensitive to movements of pets of up to **20 kg** weight.

2.14 The **Astra-3321** door opening magnetic contact detector is designed to detect opening or moving of structures made of magnetically non-conducting (aluminum, wooden, plastic, etc.) materials, generating an alarm message and sending alarm notification to the controller via radio**.**

Table 1 - Controller Indication

(U)	POWER LED	Power status
	On	External power supply, BAT charged
	Flashing **1 time every 2.5 sec**	No external power, switching to BAT power
	Double flash every **2.5 sec**	No external power, BAT critical discharge (less than 2 hours of operation)
	Flashing **1 time every 0.7 sec**	External power supply, BAT missing or should be replaced.
	Switches off every **2.5 sec**	External power supply, BAT charge mode
🔒	SECURITY LED	Object status
	Green flash every **2.5 sec**	Ready for arming
	Red flash every **2.5 sec**	Not ready for arming
	Double **red** flash every **2.5 sec**	Malfunction or detector low battery
	Green flash **1 time every 0.7 sec**	of Entry / exit delay countdown
	Green light on	All partitions armed
	Red flash **1 time every 0.7 sec**	Alarm in partition
	Switching **green-red** (not more than 60 sec)	Waiting for user action (adding detector or TM key to controller's memory)
	Off	No detectors in memory
🌐	INTERNET LED	Server connection status
	Green light on	Connected
	Flashes **green**	Data transfer
	Red flash every **2.5 sec**	Ethernet connection is lost
	Double **red** flash every **2.5 sec**	GSM connection is lost
	Red light on	Connection is fully lost

3 Specifications

Radio

Operating frequency, MHz.........................433.42 (frequency 1)
Wireless coverage range
(line of sight), m**, not less...100

Controller:

Mains supply voltage, V......................................from 110 to 240
Power consumption, W, not more...5
Power supply from USB:
- supply voltage, V ....5±5%
- maximum current consumption, mA, not more 500
- rated current consumption, mA, not more 200

Power supply from external source 12 V:

- main (terminals +12V-) and backup (terminals +12VR-) power supply voltage, V ....from 10.5 to 13.6
- maximum current consumption, mA.....................................300
- rated current consumption, mA, not more 150

BAT power supply:

- supply voltage, V ....from 3.3 to 4.2
- rated current consumption, mA, not more 50
- BAT runtime, h ....from 4 to 8
- battery discharge notification threshold, V 3.5
- charge time of fully discharged battery, h, not more 10
Boot time, sec, not more..60

Relay 1, Relay 2 (RELAY 1, RELAY 2 terminals):

- maximum load voltage, V 100
- maximum load current, A...0.1

Terminals +CONx- (x = 1, 2, 3, 4):

Parameters for "open collector" mode of operation (terminals CONx-):
- maximum load voltage, V 24
- maximum load current, A..0.25

Parameters for "zones" mode of operation (terminals +CONx, 12V- or 12VR- for intrusion zone type, terminals +CONx- for fire zone type):

- duty mode voltage, V:
  - with 12V power supply....................................from 9.3 to 12.4
  - with 5V power supply...................................... from 3.8 to 4.0
- current at the AL terminals for power supply
of detectors, mA, not more 3
- short circuit current, mA, not more than:
  - with 12V power supply...24
  - with 5V power supply..10
- AL integration time, ms...40±10
- AL wires resistance, Ohm, not more.....................................220
- leakage resistance between wires or
each wire and GND, kOhm, not less..50
Resistance*** of **intrusion AL**, kOhm, with status:
- "Normal" ....from 3 to 5
- "Alarm"..from 0 to 3 or more than 5

Resistance*** of **fire type AL**, kOhm, with status:
- "Normal" ....from 3 to 5
- "Alarm".....................................from 1.5 до 3 and from 5 to 12
- "Failure" ....from 0 to 1.5 or more than 12

Resistance*** **of fire type AL in double event mode**, kOhm, with status:
- "Normal" ....from 3 to 5
- "Alarm"......................................from 0 до 1.5 and from 5 to 12
- "Fire Danger" (with resistor Radd) ....from 1.5 to 3
- "Failure"...more than 12

Touch Memory input (terminals +TM-):

Maximum length of the interface line, m 15
Overall dimensions, mm, not more than ....136 × 86 × 38
Weight, kg, not more...0.2

Operation conditions:

- temperature range, °C.................................. from - 10 to + 55
- relative air humidity, % ....up to 98 at +40°C
 without moisture condensation

Astra-5121 Motion detector

Motion speed detection
range, m/sec ....from 0.3 to 3.0
Supply voltage, V...from 2.2 to 3.0
Overall dimensions, mm ....70 × 51 × 42
Operation conditions:
- temperature range, °C.................................. from - 10 to + 50
- relative air humidity, % ....up to 98 at +40°C
                                                             without moisture condensation

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** *Wireless coverage range largely depends on the design features of the room, the interference environment. The maximum range parameters are provided when the best installation conditions for the controller and detector are met.*

*** *Allowable spread of resistance values is no more than 10%, for a value of 12 kOhm - no more than ± 2 kOhm.*

Astra-3321 Door opening detector

Triggering distance, mm ....from 20 to 30
Recovery distance, mm ....from 13 to 23
Supply voltage, V ....from 2.2 to 3.0
Overall dimensions, mm ....109 × 34 × 27
Operation conditions:
- temperature range, °C ....from - 20 to + 50
- relative air humidity, % .... up to 98 at +40°C
<div align="right">without moisture condensation</div>

4 Delivery set

Security Hub controller.. 1 pc.
Rechargeable battery 2/3 A (Li-Ion),
 3.7V, 600 or 700 mA*h ....1 pc. (installed)
Resistor C1-4-0.25-3.9 kΩ ± 5%...................................... 4 pcs.
Screw 3×30 .... 4 pcs.
Dowel 6×30 .... 4 pcs.

Motion detector Astra-5121 .... 1 pc.
Battery CR123A ....1 pc.(installed)
Jumper ....2 pcs.(installed)
Screw 3×30 .... 2 pcs.
Dowel 6×30 .... 2 pcs.

Door opening detector Astra-3321................................. 1 pc.
Control magnet.. 1 pc.
Battery CR123A ....1 pc.(installed)
Jumper ....6 pcs.(installed)
Screw 2.9x13... 4 pcs.

Network adapter .... 1 pc.
Cable USB 2.0 AM-BM... 1 pc.
UTP Patch Cord .... 1 pc.

Technical passport.. 1 pc.

5 Labelling

On the labels affixed to the controller housings and detectors, the following information is indicated:
- trademark of the manufacturer;
- abbreviated name of the product;
- IP protection (only for Astra-3321);
- firmware version;
- date of manufacturing;
- conformity sign;
- serial number;
- bar-code duplicating text information.

6 Disposal

6.1 The kit poses no hazard to life, human health, and the environment; after the expiry of its service life, its disposal is carried out without taking special measures of environment protection.
6.2 Disposal of batteries, BAT shall be carried out by handover to the trading organization, service center, equipment manufacturer or organization engaged in the reception of waste batteries.

7 Manufacturer warranty

7.1 The manufacturer guarantees the compliance of the kit devices with the technical conditions if the consumer observes the conditions of transportation, storage, installation and operation.
7.2 The warranty period of storage is 5 years 6 months from the date of manufacture.
7.3 The warranty period is 5 years from the date of commissioning, but not more than 5 years 6 months from the date of manufacture.
7.4 The manufacturer is obligated to repair or replace the kit devices during the warranty period.
7.5 The warranty is not effective in the following cases:
- in case of non-observance of the operation rules and conditions;
- in case of mechanical damage to the kit devices;
- when repairing the kit devices in a service center not authorized by the manufacturer.

7.6 The warranty applies only to the controller, Astra-5121, Astra-3321. All third-party equipment used together with the kit devices shall be covered by their own warranties. The warranty shall not apply to BAT, batteries, connecting cables used together with the kit devices.

The manufacturer is not liable for any damage to health, property or other accidental or intentional loss, direct or indirect damage based on the user's statement that the kit has not fulfilled its functions, or as a result of misuse, failure, or temporary inoperability of the kit devices.

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Manufacturer:
ZAO NTC TEKO
420108 Kazan, Russia,
Gafuri str., 71
Tel.: +7 (843) 528-03-69
export@teko.biz
www.teko.biz

Made in Russia

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