



# TSM ANTISVID-2 Optic-Electron Device User Manual

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## TSM ANTISVID-2 Optic-Electron Device



## LIST OF USED ABBREVIATIONS

- **OM** Operating manual
- **VWS Video** – watching system
- **HVSS** Hidden video surveillance systems
- **LCD Liquid** Crystal Display (monitor)
- **LED Light**-Emitting Diode
- **ChU** Charging unit
- **ChG** Charging
- **DIS** Discharging

The operating manual (OM) is intended to provide correct and safe operation of device ANTISVID-2 (further in the text “device” or “instrument”) and for carrying out the evaluation of the Instrument’s technical condition with the goal to make a decision on whether it should be sent for repair.

## DESCRIPTION AND PRINCIPLE OF OPERATION

### Area of application

The Device is designed for search and visualization of location of hidden video surveillance portable systems (HVSS), camouflaged in interior objects and house-hold products, as well as of operating or disconnected small-sized video cameras at various lighting conditions, including both in full darkness and against bright light sources hidden behind glass, also those toned by plexiglas and semi-transparent mirrors, and operated in closed premises in temperate climate conditions.

### Technical characteristics

- **Action range:**
  - **Min.** 0,5 m
  - **Max.** 30 m
- Minimal distance of pupil detection, diameter 1 mm
- The horizontal and vertical angles of the receiving channel are 8x6
- Video signal PAL
- **Device power supply:**
  - **AC/DC converter** 12 V/3 A
  - **4 Li-ion** rechargeable battery of type 18650 (when working without a monitor) 3,7 V/3100 mAh
- **Power consumption:**
  - Without a monitor 5 W
  - With monitor (power supply from the network adapter) 15 W
- Operating continuous time from power supply 2 h
- **Dimensions, not more than:**
  - A device without monitor 230x160x80 mm
  - Package 470x370x180 mm
- **Weight, not more than:**
  - **A device without monitor** 1.4 kg
- **Operating temperature range** – 10°C ... +40°C

### Delivery set

The delivery set (see Table 1) comprises

Device “ANTISVID-2”	1
Li-ion rechargeable battery of type 18650	4
Battery container for batteries	1
AC/DC converter	1
AC/DC converter cable	1
Video cable	1
Charging unit	1
Power supply cable for charging unit	1
Monitor 7”color LCD (with attachment point) *	1
Cleaning tissue	1
Operating Manual	1
Package (case with insertion for package)	1

Items with \* are upon request. Delivery set with a monitor – ANTISVID-2M, delivery set without a monitor – ANTISVID-2.

The set is supplied with an uncharged battery. The battery (accumulator), AC/DC converter, charging unit and monitor can be substituted for similar or with better technical characteristics. The operation of an external LCD monitor is possible only when the instrument is used in combination with AC/DC converter (external power supply unit). While operating from the battery, LCD monitor does not function.

Figure 1 shows the appearance of the product in the package with the monitor:



Fig. 1 Appearance of the product in the package with the monitor.

The AC/DC converter is stowed in the tool tray under the device Antisvid-2



Fig. 1 Set of the product in the package with the monitor.

#### Principal of operation.

- Basic operation principle is “cat’s eye” effect (light-reflecting effect) lying in ability of optical objects to reflect probing radiation in opposite direction with angle close to its incidence angle. Semi-conducting laser IR diode (transmitting channel) serves as the source of probing radiation. The reflected signal is registered by sensitive video camera on the basis of interleave transfer sensor 1/3// (reception channel). The Device is developed on non-parallax optical scheme, i.e. with optical alignment of reception and transmitting channels.
- Transmitting channel generates laser beam in the form of vertically located rectangular raster. Ability of illuminating raster can be changed if necessary, depending on distance to surveillance object, for reception of the best image contrast. Image focusing on sharpness is carried out by adjustment of video camera objective.
- Visualization of surveillance objects is carried out through built in pseudo-binocular. In order to receive better images the body of the Device is equipped with fastening and connection for external 7” LCD monitor (delivered on request of the Customer), and also with an external CCIR standard video signal socket for connection with external monitor, video recorder or computer (with video input card).
- The device has the following adjustments: laser radiation power adjustment, adjustment on the sharpness of receiving TV camera, and diopter fine-tuning of pseudo-binocular to operator’s eyesight. Lower part of the Device is provided for 1/4” screw thread for tripod installation.
- Working with the Device means the scanning of supposing HVSS locations and detection of bright shone points (glares) on the screen of the monitor or view-finder within illuminating raster zone. If these points disappear out of raster zone or by switching off of laser, they should be considered as potential HVSS locations. Any glares which do not disappear after switching off of laser are not considered as HVSS locations.

The appearance of the device is shown in Figure 3.

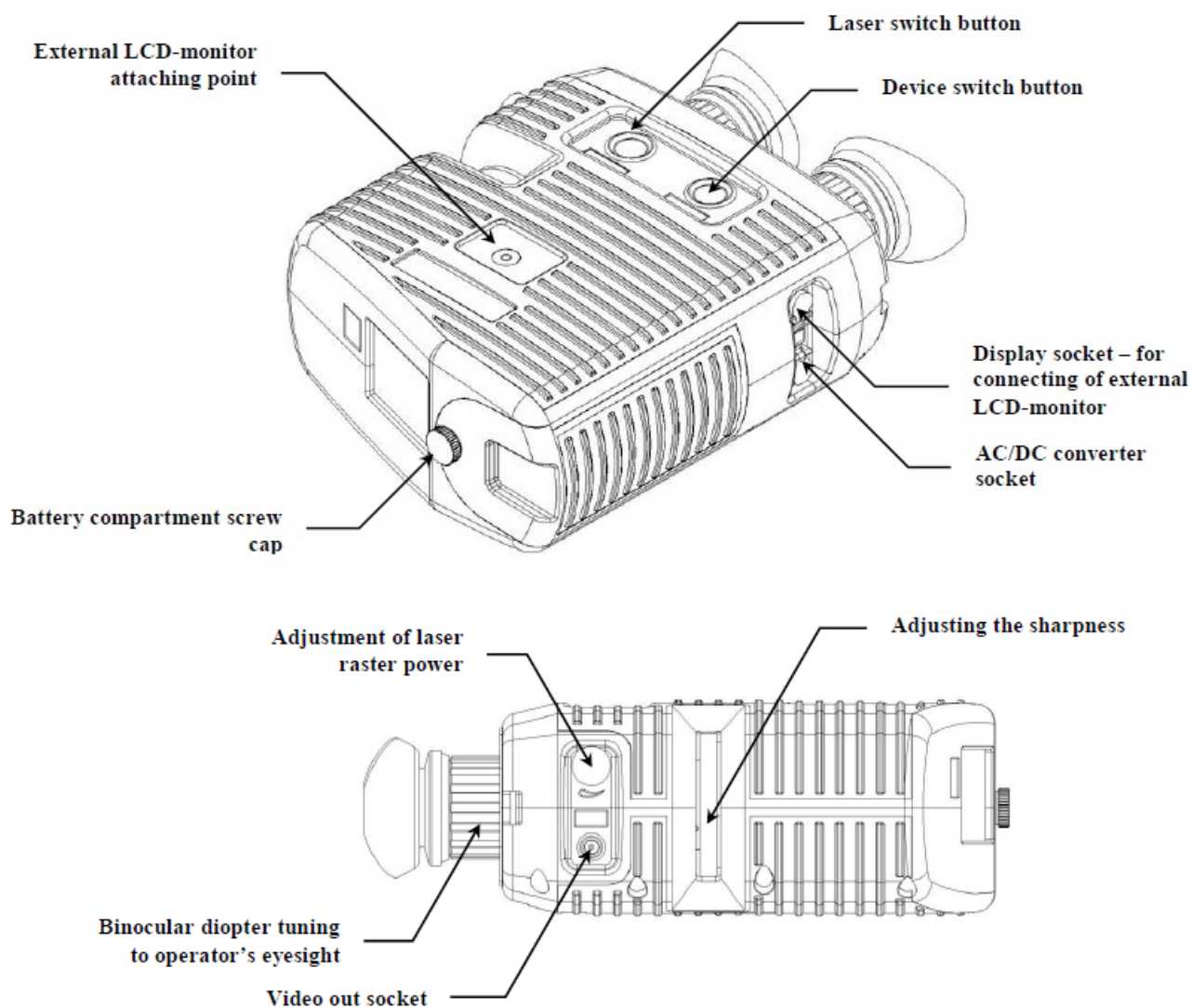


Fig. 3. «ANTISVID-2» controls

The image sample received on ANTISVID-2 is shown in Figure 4.

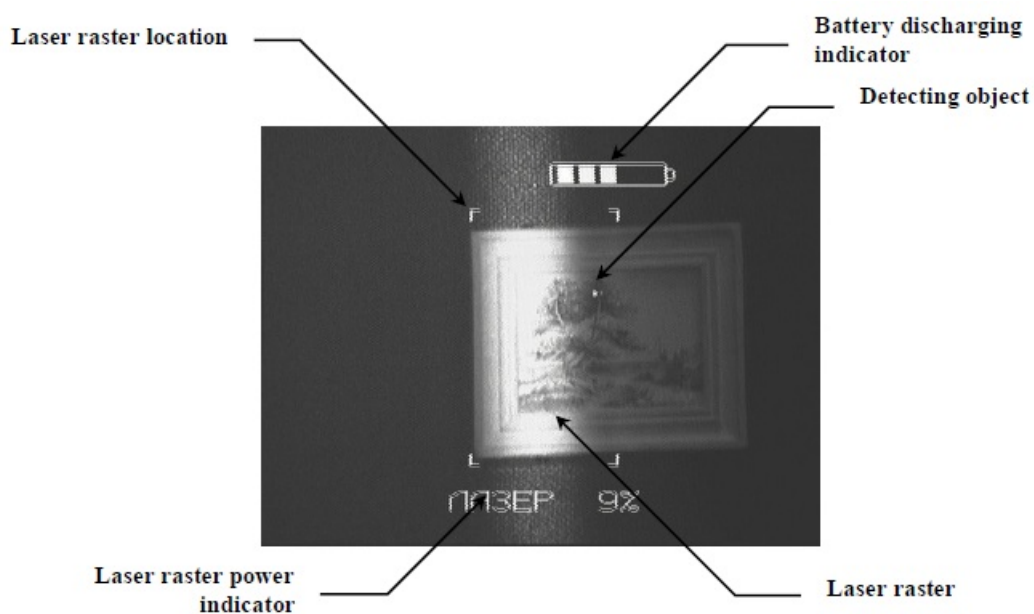


Fig. 4. Image sample received on.

**Marking:**

Marking is put on the device's body and contains:

- short name of the manufacturer;
- the name of the device;
- individual factory number;

**Packing:**

1. Components of the device and operation manual are packed into standard packing (plastic tight shock-resistant, dust-and-waterproof case).
2. Under additional agreement with the customer, if necessary, the Device in standard packing can be packed into shipping container (plywood box).

**PROPER USE****Operational restrictions.**

1. LCD-monitor is not intended for operation with power supply from a standard battery. For its connection, it is necessary to provide power supply from mains power unit. During operation from battery, LCD monitor does not function.
2. Before installation of the battery into a combined (receiving and transmitting) block it is necessary to be convinced that the Device is switched off.
3. It is prohibited to open the Device (to break the guarantee seal) and to work with battery compartment cover opened.
4. It is not recommended to use power supplies not included in delivery set as it can lead to the breakdown of the Device
5. It is not recommended to use other charging devices than those included into the delivery set for charging of standard battery as it can lead to its insufficient charge or breakdown.
6. It is prohibited to close battery leads as that can lead to its breakdown.
7. Do not store the battery at a temperature above 60°C, for example in a car exposed to direct sunlight.
8. In case of work at lowered temperatures, it is recommended to store the battery in warm places for maintenance of its capacity, for example in a pocket, and insert it into the Device just before use.
9. It is recommended to charge the battery at ambient temperature from 10°C to 30°C.
10. It is prohibited to switch on charging device in the street on rainy weather or at high humidity.
11. At work and carrying of the Device it is prohibited to touch its objective and laser filter or otherwise contaminate them as it can essentially worsen the functionality of the Device. If any contamination occurred it is necessary to wipe output laser filter and output objective optics carefully.

**Preparation for use.**

For work with external LCD monitor from 220 B:

- Take out the device, AC/DC converter and LCD monitor from standard packing;

- Connect AC/DC converter to the Device inserting AC/DC converter plug into
- Fix LCD-monitor on the Device inserting its fitting into the slide on Device's body and fastening by the screw;
- Connect LCD-monitor to "Monitor" socket on Device's body;
- Insert AC/DC converter plug into power grid socket;
- Switch on the monitor by pressing "POWER" button on the monitor.

#### **For work from storage battery (SB):**

- Take out the Device and SB from standard packing;
- If SB is not charged, it is necessary to charge it;
- Place SB into the battery compartment of the Device, unscrewing the compartment screw and removing its cover beforehand;
- Close the battery compartment cover and screw up the fixing screw.

#### **For SB charging with use of a charging unit it is necessary to do the following:**

- Unscrew the battery compartment screw and remove the compartment cover;
- Take out the storage battery (SB) from the Device;
- Fix the storage battery in the charging unit (ChU). For this purpose place the battery strictly horizontally into contact platform cavity so that the symbol « ◀ » on the battery was directed to two contact plugs. Thus two ChU contact plugs should contact the corresponding sockets on the battery. Then move the battery strictly horizontally to the arrow direction « ▶ » up to the stop so that ChU contact plugs should safely join the sockets on the battery;
- Connect adapter plug to ChU socket;
- Connect the adapter to the power grid;
- On ChU display will be highlighted: signs « TIME OF CHG », «infoLITHIUM» and «FULL». To the right from the sign « TIME OF CHG » figures are located which indicate charging time. Inside the battery sign four dark horizontal strips are located which lighting also roughly shows charge level;
- After the connection to power grid of the adapter with connected ChU and battery, charging process starts. At the same time strips in the battery sign start blinking. Charging timekeeping starts;
- On reaching full charge strip in the battery sign stop blinking. It means that the battery is completely charged.

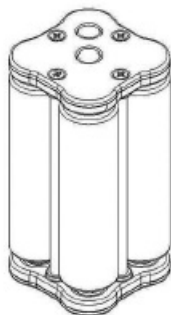


Fig.5 Cassette with installed batteries

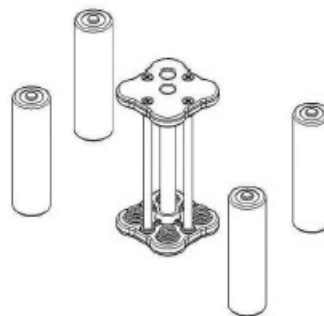


Fig.6 Batteries are removed from the cassette

#### **Recommendations on battery charging.**



For charging of lithium-ionic batteries the following rules are to be taken into account: It is not required to discharge the battery before charging, as presence of battery residual charge does not affect its nominal capacity;

- Recommended ambient temperature at charging should be from 10°C<sub>i</sub> to 30°C;
- Battery charging is to be carried out on flat surface without vibration;
- During charging ChU can heat up a little. It is normal;
- If completely charged is placed in ChU, the sign “100%” appears in the right lower corner of the display.

### **Use of the Device.**

For work with the Device the following is necessary:

- To switch on the Device, holding the button «ON/OFF» pressed for about 2 seconds;
- Direct the output opening of the Device on controllable object;
- Carry out binocular diopter tuning to operator's eyesight if necessary, rotating the adjusting ring of each eyeglass. Maximally sharp image of SB charge indicator should be achieved;
- Rotate the ring of receiving TV-camera to achieve maximally sharp image as much on the monitor or binocular;
- Press and release button “Laser” once. At guidance of the Device on walls or floor vertically located rectangular raster of laser lighting should appear in the centre of the observable image;
- Adjust, if necessary, laser raster power depending on distance to observable objects by rotating of laser power adjusting knob. On 1 meter distance the power should be minimal, on 10 m and more – maximal. Thus it is necessary to achieve the best contrast image in raster zone. Interior elements in raster zone should be well observed. It is necessary to consider, that raster contours can be unobservable at high light exposure or on big distances (more than 10 meters). It is admissible and practically does not influence probability of VWS detection.

Switching off of the Device is to be carried out in reverse order.

### **Safety measures:**

**Attention!** When the Device is switched on, it is necessary to control that the laser beam does not hit operator's eyes or other persons' eyes.

While operating with charging device it is necessary to observe electric safety rules for non-electro-technical personnel of group I.

### **MAINTENANCE SERVICE AND REPAIR**

1. It is not required any special personnel training for maintenance of the Device.
2. At contamination of output opening of the Device and view-finder lens they should be wiped by clean napkin made of natural or micro fibrous chamois and intended for cleaning of optical parts (for example eyeglasses).
3. It is not required to use technical spirit at carrying out of maintenance works.
4. Current repairs are carried out in compliance with Table 2.



Table 2		
Consequences of breakdowns and damages	Possible causes	Instructions on elimination of consequences of breakdowns and damages
After switching on of the Device operating from the battery there is no image in the view-finder.	No contact between spring clamps and battery outlets.  The battery is discharged. The battery is out of order.	Clean contacts of a dirt and oxides, try to insert the battery once again, having turned the spring clamps.  Charge the battery. Replace the battery.
Continuous interfering glares and stains are observed during operation of the Device.	Outlet opening is contaminated.	Clean the outlet opening with clean cloth made of natural or microfibrinous chamois.
Battery symbols on the display of charging device start blinking, the display shines dimly	The battery is incorrectly inserted into ChU. There is no proper contact with ChU.	Insert the battery into ChU properly.

**Note:**

If the measures specified in the above table do not allow recovering of the Device, it is necessary to send it to manufacturer for repair.

## TRANSPORTATION AND STORAGE

1. The Device is transported in a transport container by cargo and passenger transport means at ambient temperature from -30 C to 50 C and relative humidity till up 95 % at 25 C and under the condition of protection against direct exposure to atmospheric precipitation.
2. After transportation and before the operation it is necessary to keep the Device at normal climatic conditions for not less than 12 hours.
3. It is recommended to take out the battery from the Device.
4. The Device should be stored in standard packing, laid on racks in a hard-wall heated storehouse at air temperature from 5 C to 40 C and relative humidity till up 80 % at 25 C. There should not be any current-carrying dust, acid and alkalis steams and gases causing corrosion and destroying isolation.
5. While storing the battery should be taken out from the Device and stored separately in a special compartment of standard packing.
6. Before long-term storage of the battery in the non-operating condition, it is necessary to charge it completely once a year and then discharge completely. It is necessary to repeat such charging/discharging once a year in order to save its operational capability.

MANUFACTURER’S GUARANTEES

- 1. Manufacturer guarantees conformity of the Device product to technical requirements within 12 months from the moment of its putting into service.
- 2. The warranty period of storage is 6 months.
- 3. The service life (including replacement of the battery if necessary) is 5 years.
- 4. The manufacturer’s guarantees are valid if the integrity of the warranty seal is preserved and there are no external mechanical damages.

Documents / Resources

	<p><a href="#">TSM ANTISVID-2 Optic-Electron Device</a> [pdf] User Manual</p> <p>ANTISVID-2 Optic-Electron Device, ANTISVID-2, Optic-Electron Device, Electron Device, Device</p>
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