

Dear customer!

Thank you for purchasing Neoline X-COP 9100s radar detector and DVR Hybrid. Please read this manual carefully and all through to ensure proper use and longer service life of the device. Please keep the manual for future reference.

[Content]

[Operation Conditions]	2
[Brief description]	4
[Features]	6
[Specifications]	8
1. DVR Specifications.....	8
2. Radar detector specifications.....	8
3. GPS specifications.....	8
4. General characteristics.....	9
[Equipment]	10
[Installation]	11
1. Mounting.....	11
2. Connecting the power cable.....	13
[Main functions]	16
1. Buttons and keys description.....	16
2. Turning the device on/off.....	18
3. Display.....	20
4. Z-signature filter.....	27
5. Parking Mode.....	28
6. Motion Control™.....	31
7. Firmware Updating.....	32
8. Formatting micro SD memory card.....	35
9. Radio module operation.....	36
10. Operation of GPS/GLONASS modules.....	38
11. Emergency recording mode.....	43
12. Setting.....	43
13. Configuring the Setup File.....	66

[Operation Conditions]

1. Please read the terms and conditions specified in your warranty card.
2. Install the hybrid in accordance with the manual. To avoid accidents, observe the prescribed rules.
3. Use only the power cord from the kit. Using a third-party charger (even with similar connections) may compromise the performance.
4. Observe the storage and operation temperature conditions (see specifications). Do not expose the unit to sunlight for too long.
5. When leaving the car, make sure the X-COP 9100s is turned off; avoid leaving a powered device unattended for too long; it can lead to excessive battery consumption and reduce the life of the hybrid (however, when in Parking mode, the unit can only consume the battery until a specified charge level is reached).
6. Handle the device with due care; avoid dropping/crushing the device.
7. To avoid accidents, please, never do anything to the device while driving.
8. Before cleaning the car interior, remove X-COP 9100s to avoid a cleaner on it, as this can change its appearance or even impair its performance.
9. Do not install the device where the airbag may appear.
10. Use the voltage of 12-24 V.
11. Avoid any covers on the device when operating.
12. The hybrid readings may be inaccurate due to possible third-party emissions. Heavy emissions can affect proper operation of the device. The readings may vary depending on the landscape features.

13. The hybrid is only intended for detecting sources of radio emissions. The manufacturer cannot guarantee detection of all the sources nearby since the instruments are developing constantly.
14. The hybrid may operate incorrectly where there are thermal or heated windshields. Because of metal coating in such screens; detection of broadband signals and correct operation of GPS and GLONASS modules may be compromised.
15. Mounting the device with 3M adhesive type is only possible once. Choose the location wisely.
16. Never remove the memory card during operation, for it may impair the data or affect the unit.
17. To record high-quality video, make sure the camera view is unobstructed and the camera lens is clean.
18. When driving, the unit is affected by vibrations that may have negative impact on the camera focus. Please, check the camera focus carefully before use.
19. Please, format the micro SD card every two months to avoid damages to the file system.
20. Recharge the battery every two months when the X-COP 9100s is not used for a long time.
21. The built-in battery is designed for the correct completion of video recording. Recording video when in parking or in a normal mode is only possible when there is an external power source.
22. The satellite search time may increase due to the weather, time of the day, terrain conditions and certain features of the car.

The manufacturer reserves the right to modify the equipment and its soft- and hardware without any prior notice.



[Brief description]

Neoline X-COP 9100s is the world's first hybrid adjusted for the radars used in Worldwide. The device is intended to ensure your driving safety. Most of the police radars and police posts equipped with radar systems are located on busy city roads or country highways where speed limits usually apply; so you'll always know there are some, even without seeing any signs, and you'll always know where to be careful.

A built-in GPS base contains more than 100 000 entries of posts and radars around the world and allows detecting police radars well in advance.

Neoline X-COP 9100s is the world's first hybrid able to detect even the "phantom" Multa Radar CD and CT system. This type of radar is widespread in Europe and starts spreading in Russia now in 2018. These radars show a unique signal structure, so their detection requires special tools. In Russia, the system was first introduced in 2018 by Multa Radar CD moving on board of a Lada Largus.

The hybrid integrates EXD Plus, an ultra-sensitive new-generation radar module ensuring radar detection well in advance. The device is of special efficiency in Turbo mode excluding any sudden low-powers and other surprises. Compared to the standard module, the device is totally adapted to detecting radar systems used in Europe. This is the world's first hybrid with a separate platform for detecting radars in the Ka band.

To avoid most false positives (especially those caused by other cars' blind zone sensors), a Neoline's proprietary solution of Z-signature filters and Ka-filters is used.

The Ambarella A7 video processor and the best new generation matrix by SONY provide high quality records, even at night, even at 120 km/h speed. A 135-degree aspect angle covers four road lanes and the roadside.

The video record quality also depends on the object lens installed before the matrix. In our case, it is a set of six glass lenses that guarantee clear Full HD image.

NOTE: GPS/GLONASS modules are required to detect police cameras using video units, e.g. Avtodoriya or certain Strelka-Plus cameras, since these emit no radio signals and can only be detected by the GPS database coordinates. Besides, the GPS/GLONASS modules allow displaying the speed value right within the frame or at a speedometer screensaver.

[Features]

Easy operation

- Motion Control™
- Neoline Easy Touch interface
- Ergonomics
- Smart Click Plus mounts allowing active charge
- Backup video files copy to a secondary SD card
- Quick access to main settings and functions through the main screen menu
- Review, rewind, copy and lock video files right on the device!
- Software and GPS database are updated with a micro SD
- Easy operation with four buttons

Detection and GPS data features:

- Long-range ultrasensitive EXD Plus module (K+Ka band)
- Multa Radar CD, CT and CD moving detection (M-band)
- Detection of broadband signals (K, M, Ka, Laser and Strelka)
- Region-specific band adjustment
(Russia, Baltic countries, Europe, the World, the USA, Israel, the CIS, the PRO1 and PRO2)
- Z-signature filter
- Ka-filter
- K-band options: broad, narrow or targeted

- Global GPS database of police radars (Russia, Europe, USA, Israel, CIS, Turkey, Middle East, Australia etc.); see the complete list at neoline.com.
- Notification on nearby traffic cameras orientation (bus lane, "following", intersection, roadside, crosswalk)
- Smart processing instant and medium speed control cameras (Cordon-Temp, Skat-Rif, Strelka Plus, Avtouragan -VSM, Vocord Cyclop)
- Car-camera distance, speed limits / allowed speed / average speed, signal power / camera name and driving regulations control can be displayed right on a display
- The modes of operation are as follows: City/Road/Turbo /X-COP
- Auto Turbo mode (automatic activation of Turbo mode)
- Option to disable the K band when in City mode
- Priority to GPS or RD modules
- GPS or RD modules silent unless the predefined speed is reached
- Max speed
- Tolerable overrun
- Setting of Danger and Silence regions
- Adjustable radius of Silence and Danger regions
- GPS positions of individual types disabled/enabled
- Voice announcement of 45 types of station radars
- Adjustable volume / brightness
- Automatic volume control
- Passing-by notification
- Speed unit options (km/h/mph)
- Detection range of 2,5 km
- VG-2 / Specter 4 / Specter Elite counter-detection

- Demo mode
- Made in Korea

Clear and natural looking video:

- Realistic and clear video as detailed as possible in the day or at night.
- Smart anti glaring
- Bright and contrast image on the Hybrid screen
- Auto dimming display
- Sound notification
- Adjustable volume (9 levels)
- Inside audio recording
- Battery charge indicator
- Adjustable video sharpness, contrast, exposure and quality
- 3 recording modes (standard, emergency and parking mode)
- Cyclic recording
- Review, rewind, copy and lock your records right to the device
- Adjustable G-sensor and motion sensor (while driving and parking)
- Parking mode
- Voice reports on satellites
- GPS time synchronization
- Stamp indicating license plate number, speed and video time and date
- 2 styles of a screensaver: "speedometer" and "dark"
- Automatic night mode recording

- Protection of the car battery: hybrid is disabled when the battery voltage drops below the set threshold
- Voice prompts in Russian, English, Lithuanian
- Memory card formatting
- Software version

[Specifications]

2. DVR Specifications

- Ultra-X and Ultra-K bands
- K band (24.150GHz +/- 100MHz)
- M band (24.150GHz +/- 100MHz)
- KA band (34.70GHz +/- 1300MHz)
- Laser (800nm ~ 1100nm)
- Strelka (24.150 GHz)

4. General characteristics

- Input voltage: 12V ~ 24V DC
- Current consumption: 400mA ~ 500mA
- Dimensions (mm): 94 (length) * 73 (width) * 46 (height)
- Working temperature: -10 °C ~ 60 °C

3. GPS specifications

- GPS module: MK-120G (U-BLOX8)
- Antenna (18mm*8mm)
- Warm start: <10 seconds
- Cold start: <2 min

[Equipment]

- 1) Neoline X-COP 9100s
- 2) Mounted with 3M adhesive tape on the Smart Click Plus rack with active charger
- 3) Power cable to car outlet (DC12V ~ 24V)
- 4) Power cable to the Neoline Fuse Cord 3 pin on-board network (DC12V ~ 24V)
- 5) Fasteners for power cable (8 pcs)
- 6) Extra adhesive tape (3M)
- 7) Storage case
- 8) Tool to remove 3M tape



[Installation]

1. Mounting

1.1. Recommended position

Position the device so that it is in the center of the windshield and slightly below the rear view mirror (so that the display is not covered). See example at the picture.

So installed, the device takes up a minimum of the windshield space, does not obstruct the road view and locates close to the driver.



1.2. Mounting procedure

- Take the Smart Click Plus windshield mount on 3M scotch tape from the box.
- Insert the free end of the fastener into a special opening on the top of the X-COP 9100s.
- Select the mounting location on the windshield.
- Attach the device to the windshield using the Smart Click Plus mount. Select the location of the camera wisely, since the adhesive tape to fix is of single use.
- If you need to change the position the 3M tape, use the kit tool to remove the tape; split the mount carefully and the attachment from the adhesive tape, then remove the tape off the windshield.
- X-COP 9100s must be fixed in a horizontal plane so that it makes no obstruction to radar signals or road view.
- To get the best record, the camera should capture 30% of sky and 70% of the road.
- Connect the 12-24V power cable to the car outlet and to the Smart Click Plus mount.



The installation of the holder is combined with the power supply.
One step is enough to start the device.

2. Connecting the power cable

2.1. Cigarette lighter power cable

An installation example for the power cable shown on the picture is as the safest, since the driver's view is unobstructed.

The special fastening elements for the power cable that are included in the kit will help to fix the cable in this way.

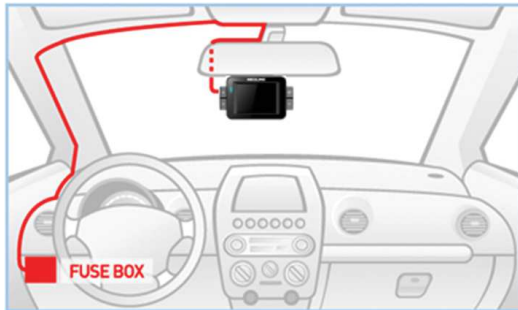


2.2. On-board network power cable

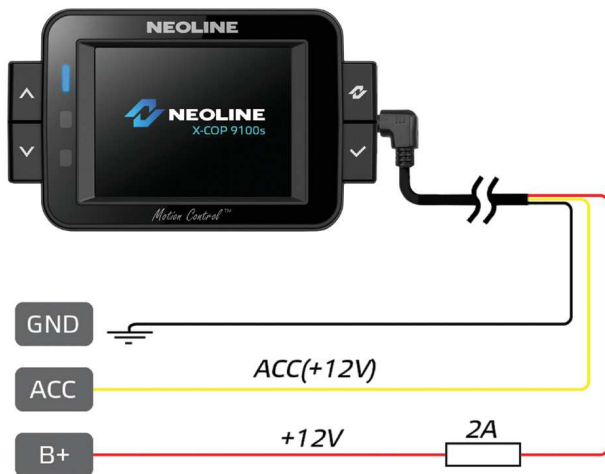
Route the power cable to the fuse block as the diagram below shows.

Connect the power cable to the fuse box in accordance with the instructions:

- Connect the BATT (+) power cable to the circuit providing stable 12V voltage.
- Connect the ACC cable to the power circuit (ignition).
- Connect the GND cable (-) to the vehicle ground.

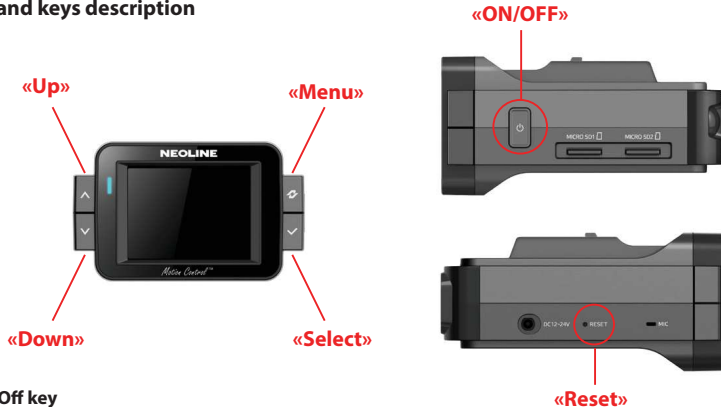


2.3. Power cable to on-board network connection example



[Main functions]

1. Buttons and keys description



1.1. On/Off key

- When you start the car engine, the X-COP 9100s turns on automatically, provided it is connected to the on-board lighter.
- To turn the device on/off manually, press and hold the ON/OFF key for 2 seconds.

1.2. Up and Down keys

- Press the Up or Down key to adjust the volume while the device is turned on.



- Press the Up or Down key when in Menu mode to switch between the parameters.
- Press and hold the button for 2 seconds in Menu mode to move to a new page or return to the previous page.
- Press and hold both the Up and Down keys for 2 seconds to turn the radar module on or off completely (in case the RD component needs to be removed).

ATTENTION: the Menu is not available at this point.

1.3. Menu button

- Power on, please, press to enter the Settin
- Press and hold the button for 2 seconds to enter the Quick Settings mode.
- When in Menu mode, press the key to exit it.

1.4. Select button

- Press the Select key to switch the detection modes (X-COP, City, Motorway or Turbo).
- Press Select when in Menu mode to activate your selection.
- Press and hold Select button for 2 seconds when the device is turned on; standard video recording will start.
- Press and hold Select for 2 seconds when the device is turned on (without connecting the power cable); the current screen image will be saved into the „Events“ folder (memory card). The image size is 1920*1080 pxls.

1.5. Reset button

The X-COP 9100s is powered by a battery, so there is a possibility that the system may fail. In this case, you need to reboot the system by pressing the RESET button.

2. Turning the device on/off.

When you start the car engine, X-COP 9100s turns on automatically. For manual switch, press and hold the On/Off key for 2 seconds. When the device is turned on, the Neoline logo appears on the display.

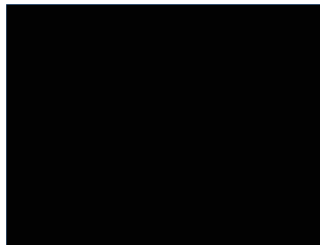
(Display with logo)



(Standard mode)



X-COP 9100s turns off when the user turns off the car engine or holds the ON/ OFF key for 2 seconds.



3. Display

3.1. Description of Standard mode icons

The display shows the status of the device and the active settings.

1) Current speed

Displays the current vehicle speed

2) GPS/GLONASS indicator

Displays connection to satellites status



(GPS/GLONASS
connected)



(GPS / GLONASS
disabled)

3) Time

Displays the current time

4) Modes (press Select to activate)



**Standard
mode**

①

②

③

④



(X-COP)



(City)



(Road)



(Turbo)



Description of the modes:

- CITY MODE

Lower sensitivity when detecting police radars. Significant reduction in false signals from such sources as:

- **dead zones sensors**
- **sliding doors with motion sensors**
- **base stations of cellular networks**
- **traffic sensors,**
- **non-standard electronic devices in the car (including devices with a GPS module, radar detectors, mobile phones, etc.)**
- **high-voltage transmission lines**

We recommend activating the City mode when driving in densely populated areas.

- ROAD MODE

Standard sensitivity at detecting radars. Allows detecting radar complexes at a longer range than when in the City Mode; but interference resistance here is worse. We recommend turning this mode on when driving outside the populated areas.

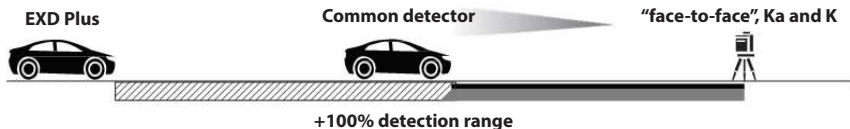
- TURBO MODE

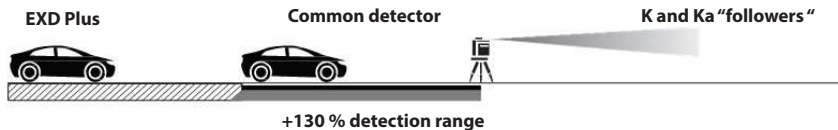
Maximum detection sensitivity and range, yet poorer interference resistance. It is useful when combined with the EXD Plus long-range radar module.

We recommend using the Turbo mode when driving on highways and autobahns to ensure maximum detection distance.

EXD PLUS SUPERLONG RANGE RADAR MODULE – is an advanced EXD module; it allows detection of K-band radar (used in Russia, CIS, and Europe) and KA –band radars (widely distributed in Europe, Israel) at the maximum possible distance.

Perfect combination with Turbo mode; longest detection range; detects even low-capacity “followers”.
Neoline’s knowledge.






*Possible maximum distance gain in comparison with a conventional detector.

X-COP MODE

Automatic selection of frequency bands, sensitivity modes (City/Motorway) and false positive filters based on the vehicle speed.

Driving	Speed	K	M	Ka	Strelka	Mode	Z-signature filter	Ka-filter	Notification
In traffic jams	0-24 km/h	OFF	OFF	OFF	OFF	City	ON	ON	Silent Display only
Small residential areas	25-49 km/h	ON	ON	ON	ON	City	ON	ON	Sound alerts + display
Big cities and highways	50-89 km/h	ON	ON	ON	ON	Highways	ON	ON	Sound alerts + display
Highways and motorways	90+ km/h	ON	ON	ON	ON	Turbo	OFF	OFF	Sound alerts + display

5) Video recording and battery charge indicator

Indicates current recording status and battery charge level.
When video is recording at the moment, the icon  flashes.
In case no Micro SD memory card is inserted, the icon is not displayed.

3.2 Quick Menu (hold down Menu button for 2 seconds)



(Danger Zone)



(False Zone)



(Microphone)



(Video ON/OFF)



* To switch between the options in the Quick menu, use Up/Down key

Danger Zone and Silent Zone



A Dangerous Zone is a zone that requires your special attention. For example, a section of bumps, a school, a busy intersection, a quick ambush, etc.

Adding a Danger Zone

Press Select; when a confirmation message appears, press Select again. A Danger Zone is now added. (You can add no more than 400 Danger Zones).

Removing a Danger Zone

When the device notifies of the previously added Danger Zone, press Select; when confirmation message appears, press Select again. Danger Zone will be deleted.

Silence Zone



A Silence Zone is a zone where broadband signals (so-called false signals) are detected, but where there are no police radars. Such zones are found at gas stations and shops with automatic doors.



ATTENTION: When you are in Silence Zone, there are no incoming signals, except for GPS notification.

Adding a Silent Zone

When a signal is detected, press Select; a confirmation message is displayed, press Select again. A Silent Zone is now added.

Removing Silent Zone

When you enter the Silence Zone, the proper icon is displayed. To delete the Silent Zone, press Select while in this zone; a confirmation message will appear, press Select again. Silent Zone will be deleted.

(Microphone) (ON/OFF)

Microphone ON: sound recording starts
Microphone OFF: recording stops



(Microphone ON)



(Microphone OFF)

4) Recording on/off

Recording ON, video recording starts

Recording OFF, video recording completed



(ON)



(OFF)

3.3. No Micro SD-card connected.

A warning note on no memory card appears followed by two beeps.

4. Z-signature filter

A unique technology developed by Neoline to reduce the number of false positives. It timely recognizes and blocks false positives from such dead zone sensors as: "Blind Spot Monitoring", "Side Assist", "Blind Spot Detection", etc.

Significant reduction in false signals from such sources as:

- sliding doors with motion sensors,
- cellular network base stations,
- traffic sensors,
- non-standard electronic devices in the car (including devices with a GPS module, radar detectors, mobile phones, etc.)
- high-voltage power lines

The essential difference of this technology from other signature technologies is that using a Z-Signature Filter affects NO real police radars, such as:

- KRIS-S and KRIS-P stationary and mobile complex
- ARENA stationary and mobile complex
- KRECHET complex registering violations of the traffic rules
- Cordon Photoradar Complex

We recommend you to activate this mode when driving in densely populated areas.

ATTENTION: The Z-signature filter is disabled in Turbo mode.

5. Parking Mode

This mode allows saving the vehicle's battery at long stops.

Recording to the memory card is only allowed when the motion sensor detects any movement in front of the car or when the G-sensor is triggered with a hit, shake, etc.

Video is recorded to a separate Parking folder at lower frame - and bit rates.



5.1. Prerequisites for Parking mode automatic activation

When connected via a cigarette lighter socket:

- The power cable must be connected to a Smart Click Plus mount or to an X-COP 9100s device and to the car outlet.
- The cigarette lighter socket must have a constant voltage, even after the engine is turned off.
- Open a Parking mode menu, set an interval ("X min") to wait before the mode activates; the mode activates when there is no heavy traffic ahead the car.
- Set G-sensor and/or motion sensor sensitivity in Parking mode.
- After the engine starts and movement begins, the device switches to normal mode automatically after emergency recording (no more than 50 seconds).

We do not recommend you to set too small intervals, because the activation may trigger during short stops on the way!

NOTE: Please, ask your car manufacturer for any information on operating the 12V outlet.

Connection via Fuse Cord 3 pin cable.

- The cable must be connected according to the diagram in Section 1.4 hereof; besides, it must be connected to an X-COP 9100s device.
- Set G-sensor and/or motion sensor sensitivity in Parking mode.
- Where the Parking mode settings show ON, the Parking mode activates as soon as ignition is off.
- When the Parking mode settings show time interval set ("X min"), the mode activates the same way as in a lighter socket is used.
- When the Parking mode settings show OFF, the device disconnects as soon as ignition is off.
- Once the motor is started, the system switches to normal mode instantly.
- Where recording started before the motor starts, the Normal mode activates automatically once the emergency recording is completed.

ATTENTION: Parking mode only allows using the on-board network for a power source.

5.2. Recording in Parking mode

If there is a stroke when in Parking mode or any movement ahead the car is detected, the video file is recorded for 10 seconds before this event and 50 seconds after it; the file is saved to the "Parking" folder of the memory card. Resolution of the records taken in Parking mode is as follows: 1920*1080 (Full HD)/1280*720 (HD) at 15 fps

6. Motion Control™

Motion Control™ is a patented technology of gesture recognition to turn off the voice and sound warning while approaching the police radar. You can simply hold a hand in 10-15 centimeters from the device and the sound will be turned off with a special sound signal. Please, do the same steps to turn the sound on.

In addition, after the police radar notification is over, the sound turns on automatically, so you won't miss the next notification.



7. Firmware Updating

You can update the firmware with a memory card.

Please, see the procedure.

- 1) Go to www.neoline.com.
- 2) Go to the "Updates" section
- 3) Select NEOLINE X-COP 9100s in the Hybrids category.
- 4) Select the latest GPS database and firmware to download from the drop-down list (if applicable).
- 5) Connect the memory card to the computer.
- 6) Copy the GPS database and firmware files to the Micro SD-card.

Video Firmware

The firmware file name should begin with "X-COP9100s"; the file format should be ".bin".

- For example: "X-COP9100s (RevM42).bin"

The firmware file is only available when the requirements are met.

Detector Firmware

The file name of the detector firmware should begin with "X-COP9100s"; the file format should be ".rd0".

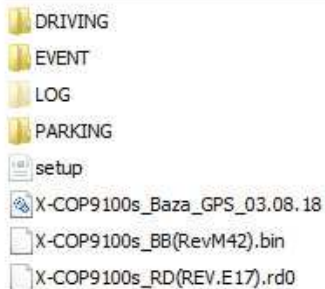
- For example: "X-COP9100s_RD(RevE19).rd0"

The firmware file is only available when the requirements are met.

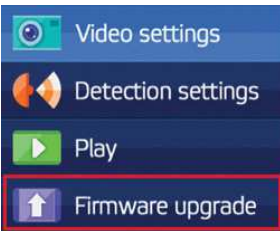
GPS Database

The GPS Database file format must be: .db.

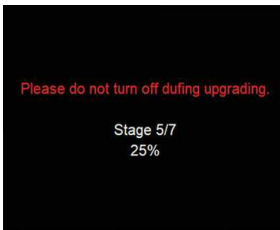
- For example: "X-COP9100s Baza_GPS_Neoline_20.04.18.db"



- 7) Disconnect the updated memory card and insert it into the X-COP 9100s memory card Slot 1.
- 8) Turn on the X-COP 9100s.
- 9) Open the menu and go the "Firmware Upgrade" section



10) The screensaver appears and updating begins.



11) If no firmware file is found, the proper message appears: "Firmware file not found".

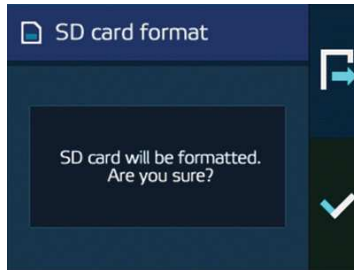
12) Hybrid X-COP 9100s shut down automatically as soon as the update is complete.

8. Formatting micro SD memory card

When the memory card is formatted, all its data are deleted. Make sure that you have saved your important data elsewhere. We recommend you to format the memory card once in 2 months to ensure stable operation.

Please, follow the instructions below:

1) Press Menu – Video Settings – Memory Card Formatting



2) Press "OK" and confirm deleting all the data from the memory card

3) The device will automatically reboot after formatting the memory card

9. Radio module operation

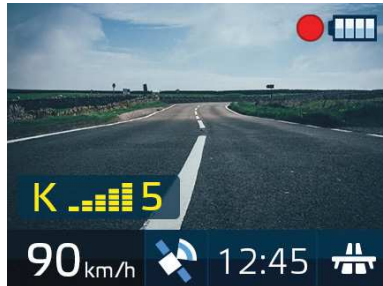
The device has a radio module for detecting radar emissions of H, M, Ka, Laser and Strelka bands. Information about the police radar is displayed on a 2-inch IPS display

9.1. Displaying frequency bands

Standard police radars operate within the X, K, Ka, Laser frequency bands.

Besides, X-COP 9100s distinguishes the following bands:

- Strelka (or Arrow in Eng.) for the detection of nearby police Strelka radars
- M-band for the detection of Multa Radar CD, CT, CD moving ra



K

Ka

St

Laser

M

9.2. Display shows as follows:

The detected radar signals are distributed by strength/power; the stronger the signal, the more intensive the audio. Neoline X-COP 9100s notifies of any detected radars with voice announcement and message on the screen.

Level	1	2	3	4	5
Notification Interval (s)	1.5	0.9	0.6	0.3	0.15



Signal level is 5

10. Operation of GPS/GLONASS modules

X-OP 9100s is equipped with GPS / GLONASS modules and a database of police radars and cameras all over the world (Russia, Europe, USA, Israel, CIS, Turkey, Middle East, Australia etc.). Please, see the complete list at www.neoline.ru. Since the database is constantly developed, you may look for details at www.neoline.com.

10.1. Distance to the radar

The range of notification can be set based on your preferences:

1) By the **parameter in the database** (each camera has its own parameter expressing the car-to-camera distance in meters where notification is best required).

2) A value is assigned to each camera in the database according to the value in the settings, e.g.:
Values: 300m / 400m / 500m / 600m / 700m / 800m / 900m

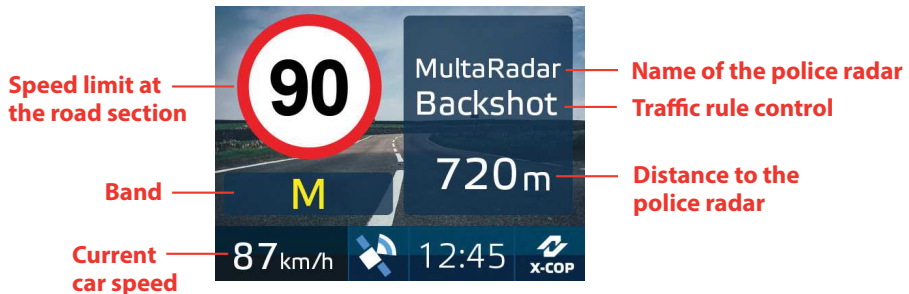
3) By **the current vehicle speed**:

Notification Distance	600m	650m	700m	750m	800m	850m	900m
Vehicle Speed	0 km/h ~ 60 km/h	61 km/h ~ 70 km/h	71 km/h ~ 80 km/h	81 km/h ~ 90 km/h	91 km/h ~ 100 km/h	101 km/h ~ 110 km/h	Over 110 km/h

10.2. Information on the detected police radars

X-COP 9100s makes an audio and voice notifications of the police radar, and displays the information to indicate:

- Type of the radar or camera
- Type of traffic control, if any
- Distance to the radar/camera
- Speed allowed at the road section
- Average vehicle speed (when detecting medium average speed cameras)



10.3. Cameras of average speed control

Cameras without a radio block carry out the control of average speed. Two cameras are installed on the road sections in about 500-10 000 m one from another. When the driver passes camera 1, the travel time is registered. When driving through the 2nd camera, the time of travel is also fixed and the average speed of the car is calculated. In case the average speed at the section was excessive, FINE IS COLLECTED. Examples of such cameras are Avtodoria, Strelka-PLUS

X-COP 9100s detects such camera; it processes this system as follows:

Displaying the distance to the 1st camera and voice notification
After passing camera 2, the distance to camera 2 is displayed.
Information on current average speed will be displayed simultaneously with the distance to the camera 2.
If the current average speed exceeds an allowed speed, you will hear an audible warning signal.

When you pass the camera 2, a voice announcement will be made about the end of video monitoring
When you leave the section of the road between two cameras, X-COP 9100s will send you the warning about the camera of average speed
When the car stops on a road between two cameras, the average speed will continue to be displayed on the display



10.4. Types of control cameras

Many police cameras can be configured to control traffic rules.

Type of traffic control	Display notification
Control of the bus-only lane	The OT lane
Traffic lights or intersection control	Intersection
Control of the passage of a pedestrian crossing	Crosswalk
Roadside control	Roadside
"Following" camera to control the pass	"Following"

NOTE: After notification of the police radar, the permitted speed is announced on the current section of the road and the type of traffic control camera (if any)
For example: #Strelka, 60, roadside#

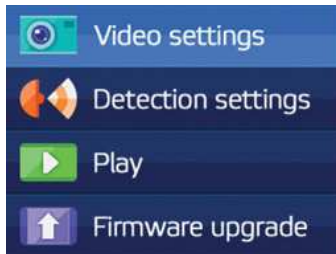
11. Emergency recording mode

Set the sensitivity value for the G sensor. When the G-sensor triggers (sudden acceleration, impact, flipping, tossing on road irregularities, etc.) in the recording mode of 10 sec. video before the event and 50 seconds after it, this will be automatically saved in the "EVENT" folder in a separate file.

12. Settings

12.1. Press Menu to open settings.

The Settings for Video / Detect / View Recording / Firmware Upgrades are available in the Menu.



To exit the Settings mode, press Menu

12.2. Video Settings



Functionality:

- Select Button is used to select or confirm any setting
- Up / Down buttons mean go to another setting / mode
- Menu means go back to menu

The following is a detailed description of each Video setting:

Screen Brightness

Changes the brightness of the display (the higher the value, the brighter is the display)

Values: 1 ~ 10

Display Auto Dimming

Turns off the display in a specified period.

Values: Off (the display is always on) / 10 sec / 20sec / 30sec / 1 min

Resolution

Sets the video resolution

*Values: 1920*1080 (Full HD)/1280*720 (HD)*

Audio

Records sound during X-COP 9100s operation

Values: On/Off

Video quality

Sets the quality settings (bit transfer rate). The higher the bitrate, the better the quality; yet, the video size also increases.

Values: High/Medium/Normal

Image Sharpness

Sets image sharpness

Values: 1 ~ 5

Contrast

Sets image contrast.

Values: 1 ~ 5

Image brightness

Sets the image brightness.

Values: -2.0 ~ +2.0

WDR

The Wide Dynamic Range (WDR) function provides a balanced image by color and light in difficult conditions - with back-lighting and intensive changing lighting.

This is especially important when entering/leaving the tunnel, in bright direct sunlight, etc.

Values: On/Off

Sensitivity (while driving)

Sets the sensitivity of the G-sensor.

Values from 1 to 10, where THE LEAST MEANS THE MOST SENSITIVE

We recommend you to set the value of 1 or 2

Sensitivity (during parking)

Sets the sensitivity of the G-sensor in parking mode.

Values: OFF, 1, 2, 3, where THE LEAST MEANS THE MOST SENSITIVE

Movement sensor (parking)

Sets the sensitivity of the motion sensor in Parking mode.

Values: OFF, 1, 2, 3, where THE LEAST MEANS THE MOST SENSITIVE

Parking mode

Sets the period of time after which the X-COP 9100s switches to the Parking mode, if the car does not move (the engine must be ON).

If the engine is OFF, the device enters the parking mode immediately.

Values: Off/On/ 5 min / 10 min / 15 min / 20 min / 25 min / 30 min

Recording time (while driving)

Values: 1min / 2 min / 3min / 5 min

Cyclic recording (Event)

Sets a cyclic recording to a folder with emergency records (the Event folder)

Value ON: the "Event" folder will be overwritten when it is full

OFF: when the Event folder is full, the message "Event folder is full" will appear and the following emergency recording files will be written to the "Driving" folder until you free up space in the "Event" folder.

Voice reports on satellites

Values: On/Off

Off: disables voice notification on detected satellites. Only the indication is displayed at the bottom of the screen.

GPS Time Synchronization

Sets the time acc. to the current time zone

Date & Time

Sets the current date and time if the GPS Time Sync function is turned off.

Date & Time Stamp

ON: Date/Time will be recorded to the video file in the lower right corner.

OFF: Date/Time will not be recorded

Speed Stamp

ON: The current speed will be recorded to the video file in the lower right corner.

OFF: The current speed will not be recorded

Speed Stamp up to 100 km/h

If the parameter is enabled, the video file will NOT inform of the current vehicle speed if the speed exceeds 100 km / h.

Screen Saver

The Screen Saver function is interrelated with the Auto Dimming Display function.

When the display is turned off while the device is running, (the Auto Dimming Display function is on) one variant of Screen

Saver types can be displayed, as follows:

Speedometer. The display will show the speedometer and the current date

Dark. The video being recorded is not shown on the device's display, and

GPS alerts light up on a black background.

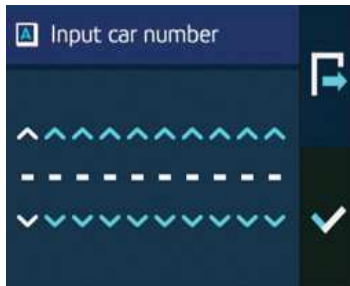
Values: OFF / Speedometer / Dark



Night mode

Night mode sets the time at which the night mode of video shooting will turn on. In the night mode, more noise will be present on the video, but at the same time, more details in unlit sections of the road or roadside are detected.

Enter the number of your car that will be displayed on the video.



Voltage disconnection

The device is switched off if the voltage in the vehicle's network drops below the set value in this parameter

Values: 11.0B - 12.3B

Language:

Select one language: Russian, English or Lithuanian

Default settings

Reset all values to the factory settings, depending on the region you select

Values: World, Europe, Baltics, Russia, CIS, Israel, USA

The preset parameters are as follows:

- X-COP mode
- Volume: 7
- Brightness: 10
- Auto Dimming Display <20 c
- Resolution: Full HD (1920 * 1080)
- Audio recording: ON
- Video quality: medium
- Image Sharpness: 3
- Contrast: 3
- Exposition: 0.0
- WDR: ON
- Sensitivity (during driving): 2
- Sensitivity (during parking): 3

- Movement sensor (parking): 3
- Parking mode: 5 min
- Recording time: 1 min
- Cyclic recording (Event): ON
- Voice notification on satellites: ON
- Time zone: GMT +3
- Date and time stamp: ON
- Speed stamp: ON
- Speed stamp up to 100 km/h: ON
- Screen Saver: Speedometer
- Demo mode: OFF
- Voltage disconnection: 12.3B
- Language:
 - World: **English**
 - Europe: **English**
 - The Baltic: **English**
 - Russia: **Russian**
 - CIS : **Russian**
 - Israel: **English**
 - USA: **English**
- Auto muting: ON
- GPS without sound up to: OFF
- RD without sound up to: 60 km/h

- Voce: *ON*
- Sound: *ON*
- GPS notifications: *ON*
- RD notifications: *ON*
- GPS Priority: *ON*
- Auto turbo: *90 km/h*
- Silence Zone Radius: *100 m*
- Danger Zone Radius: *600 m*
- Tolerable overrun: *0*
- Max speed: *OFF*
- Range of GPS alerts: *by value in the GPS database*
- Passing-by notification: *ON*
- Z-signature filter: *ON*
- Ka-filter: *ON*
- Speed unit options (km/h or mph)
- World: *km/h*
- Europe: *km/h*
- The Baltic: *km/h*
- Russia: *km/h*
- CIS: *km/h*
- Israel: *km/h*
- USA: *mph*

Frequency response matching:

- World: ***World***
- Europe: ***Europe***
- The Baltic: ***Baltic***
- Russia: ***Russia***
- CIS: ***CIS***
- Israel: ***Israel***
- USA: ***USA***

X: OFF

K-band:

- World: ***Broad***
- Europe: ***Broad***
- The Baltic: ***Narrow***
- Russia: ***Broad***
- CIS: ***Broad***
- Israel: ***Narrow***
- USA: ***Broad***

K in City: ON

M: ON

Ka-band:

- World: ***ON***
- Europe: ***ON***
- The Baltic: ***ON***

- Russia: **OFF**
- CIS: **OFF**
- Israel: **ON**
- USA: **ON**

Laser: ON

Strelka:

- World: **OFF**
- Europe: **OFF**
- The Baltic: **OFF**
- Russia: **ON**
- CIS: **ON**
- Israel: **OFF**
- USA: **OFF**

Traffic Control Posts: ON

Bumps: ON

Average speed: ON

- World: **OFF**
- Europe: **OFF**
- The Baltic: **OFF**
- Russia: **ON**
- CIS: **ON**
- Israel: **OFF**
- USA: **OFF**

Strelka Radars:

- World: **OFF**
- Europe: **OFF**
- The Baltic: **OFF**
- Russia: **ON**
- CIS: **ON**
- Israel: **OFF**
- USA: **OFF**

Permanent radars and cameras: ON

Memory Card Formatting

Completely deletes all data from the memory card.

Software version

Information about the current software version is displayed.

12.3. Detection settings

Auto muting

When the parameter is turned on, the volume of the sound and voice notification will be reduced by 2 times in 6 seconds after the start of notification.

Values: On/Off

GPS without sound up to...

If the speed of the vehicle is below the set value, the voice and signal alerts about radars on the GPS base will NOT be produced.

Values: Off / 0 km/h / 10km/h ... 130km/h

GPS without sound till...

RD without sound up to...

If the speed of the vehicle is below the set value, the voice and signal alerts about radars on the GPS base will NOT be produced.

Values: Off / 0 km/h / 10km/h ... 130km/h

RD without sound till...

Voice

Voice alerts for radars and cameras in the GPS database

Values: On/Off

Sounds

Signal alerts for radars and cameras in the GPS database

Values: On/Off

GPS notifications

Enable/disable of the GPS module notifications

Values: On/Off

RD notifications

Enable/disable of the RD module notifications

Values: On/Off

GPS Priority

This function is necessary to escape double signaling when detecting radars by both GPS and RD modules. While in both modules have their own special sounds and voice alerts when they detect smth.

Values: On/Off

Priority GPS ON

When the function is turned on, the priority of the alert is given to points in the GPS database.

If the GPS database detects radar, and at the same time, the device detects the same radar with the RD module, the notification from the RD module will only be on the display. Without sound notification.

Priority GPS OFF

When the function is turned off, the priority of the alert is given to points in the RD module.

If the RD module detects radar, and at the same time, the device detects this point with the GPS database, the notification from the GPS database will only be on the display. Without sound notification.

Auto Turbo

If the vehicle speed reaches the specified speed in this parameter, the device will automatically switch into the Turbo mode.

Values: Off / 40 km/h / 50 km/h ... 160 km/h

False Zone Radius

Setting the radius of the False Zone, in which there will be no alerts for broadband incoming signals.

Values: 100 m / 200 m / 300 m / 400 m

Danger Zone Radius

Setting the radius of the Danger Zone, this is an area that requires your attention. For example, a section of bumps, a school, a busy intersection, etc.

Values: 100 m / 200 m / 300 m / 400 m

Tolerable overrun

The set value will be added to the parameter of the allowed speed set in the GPS database to each camera. There will be no warning signal up to exceeding this speed.

In the Russian Federation, the permissible speed limit (overrun) is + 20 km/h from the declared speed limit.

Values: 0 / +2 / +4 / ... +20

Maximum speed

If the vehicle speed is higher than the set value, an overrun warning signal will sound.

This function is not bound to the GPS database and functions separately from the detection of police radars. It will help you not to exceed your own set speed threshold.

Values: Off / 80 km / h / 90 km/h ... 180 km/h

GPS Notification Distance

Values: By speed / By value in the database / 900 m / 800 m ... 300 m,

By value in the database each camera in the GPS database is has its own assigned values in meters by which the notification will start.

According to the value set in the settings: a value is assigned to each camera in the database,

Values: 300 m / 400 m / 500 m / 600 m / 700 m / 800 m / 900 m

By the current vehicle speed:

Notification Distance	600 m	650 m	700 m	750 m	800 m	850 m	900 m
Vehicle Speed	0 km/h ~ 60 km/h	61 km/h ~ 70 km/h	71 km/h ~ 80 km/h	81 km/h ~ 100 km/h	91 km/h ~ 100 km/h	101 km/h ~ 110 km/h	Over 110 km/h

Passing-by notification

When you pass the camera a characteristic audio alert will sound from GPS.

Values: On/Off

Z-signature Filter

Timely recognizes and blocks false triggering from the sensors of the dead (Blind) Car Zones and maximizes the number of other false positives in the K-band.

Values: On/Off

Ka-filter

Timely detection and blocking of false alarms in the Ka-band.

Values: On/Off

Metric system

Setting the speed parameter

Values: km/h or mph

Selection of frequencies

Selection of frequencies depends on the region of the device usage.

Values: Russia / Europe / Baltics / CIS / Israel / USA

Band selection	K	K-POP	Ka	Ka-POP
Europe	Wide 23.900 - 24.250 GHz	On	33.900 - 34.200 GHz 34.200 - 34.600 GHz 34.600 - 34.800 GHz 35.400 - 35.600 GHz 35.600 - 35.840 GHz	On
Baltic	Narrow 24.050 - 24.195 GHz	Off	33.400 - 36.000 GHz	On
Israel	Narrow 24.050 - 24.195 GHz	Off	33.700 - 33.900 GHz	On
USA	Wide 23.900 - 24.250 GHz	Off	33.700 - 33.900 GHz 34.600 - 34.800 GHz 35.400 - 35.600 GHz	On
Russia	Wide 23.900 - 24.250 GHz	Off	Off	Off
CIS	Wide 23.900 - 24.250 GHz	Off	Off	Off
PRO1	User settings (by Setup file)			
PRO2	User settings (by Setup file)			

ATTENTION:

PRO1 and PRO2 settings are recorded in a file "Setup.xml". This file is located on the micro SD memory card. "Setup.xml" is automatically created on the micro SD memory card when connected to the X-COP 9100s.

K

Selection of frequencies within the K-band

Values: *Off / Super Narrow / Narrow / Super*

Super narrow	24.110 - 24.125 GHz	To minimize the most number of false positives. ATTENTION: It is recommended to those who are aware of the frequencies in which police radars operate in a region of the device use.
Narrow	24.050 - 24.195 GHz	To minimize the number of false positives. ATTENTION: It is recommended to those who are aware of the frequencies in which police radars operate in a region of the device use.
Broad	23.900 – 24.250 GHz	Standard setting to detect all police radars in the K-band.

K-band at the City mode.

It is possible to disable the K-band at City mode. This is necessary when driving in big cities, where there are no mobile radar systems, but there are numerous obstacles and noises.

By disabling the K-band in the City, you will receive information only from the GPS database.

Please, do not forget to switch to Road or Turbo mode when driving outside the city.

Values: *On/Off*

M-band

A separate band for notification about the Multa Radar CD and CT radar systems. These radars show a unique signal structure, so their detection requires special tools. For the convenience of the user, we have separately allocated the M-band, so that the user is informed of this radar detection.

Values: On/Off

Ka-band

Frequency 34.70 GHz +/- 1300 MHz

It is necessary to use this band in European countries, USA, Israel, etc.

Values: On/Off



MILTARADAR



STALKER



RAMER



MULTANOVA 6F

Enable / disable specific camera types in the GPS database:

Traffic Control Post

Values: On/Off

Radar Complex Models

Values: On/Off

Average Speed

Values: On/Off

“Strelka” video units

Values: On/Off

Strelka Radars

Values: On/Off

Permanent radars and cameras

Values: On/Off

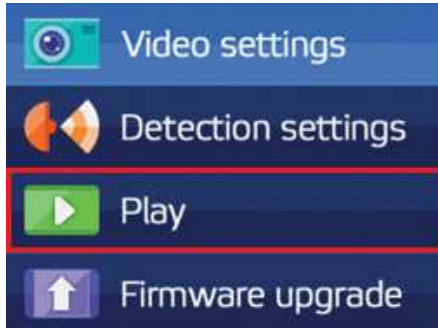
Delete all custom coordinates

By clicking OK key-button you will delete all the coordinates that were manually set to the device (the GPS database downloaded from www.neoline.ru will not be affected).

Demo mode

Starts the demonstration mode of the radar unit and GPS alerts

12.4 Viewing a Record

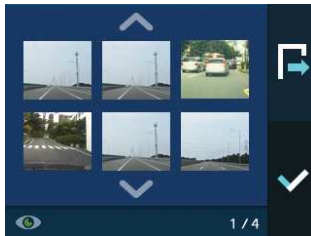


You may view video files directly on the device. Please, go to a Viewing Record section of the X-COP 9100s menu and select the memory card you want to watch the recording on.

- In the Emergency Recording section, you will find video files that were recorded while the G-sensor was operating.
- In the Video Recording section, you will find video files that were recorded in the standard operation mode of the device.
- In the Parking section, you will find video files that were recorded during the Parking mode.



***The Second Memory Card is the place of important files storage, which you can copy from the First Main Memory Card to ensure the safety of the important information.**



You can view / pause / scroll forward, backward, and delete a video while viewing the record.

Video Files Locking

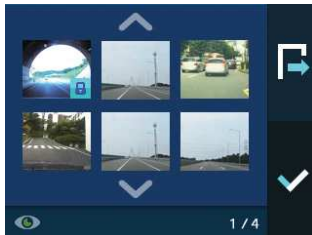
The **lock** function will save the selected file from overwriting.

Please, hold the Up button for 2 seconds

You will see the message: "Do you want to lock the file?" (Yes or no)"

Unlocking: Press the Up button for 2 seconds (In case the file is locked)

You will see the message: ""Do you want to unlock the file?" (Yes or no)



Deleting files

If the user wants to delete the file (does not matter if it is locked or not), he needs to press the Down button for 2 seconds.

Please, press the Down button for 2 seconds.

You will see the message: "This file is locked. Do you want to delete it? (Yes or no)

Limited number of locked files

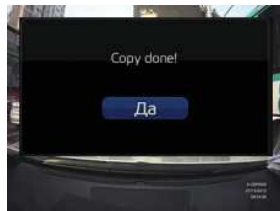
A restriction on the number of locked files is introduced to ensure the stable operation of the device. If you exceed limit, a warning note will appear:
The number of locked files exceeds the limit. Please check the SD Card.

Second memory card (Backup copy of video files)

You can save backup copies of video files from memory card 1 to memory card 2.

Instructions:

- 1) Insert another micro SD card into the 'SD card 2' slot.
- 2) Select a video from the player menu.
- 3) Press and hold the Select button for 2 seconds; after that the copying process will start.
- 4) The user can check a saved copy in the Player Menu →SD card 2



13. Configuring the Setup File

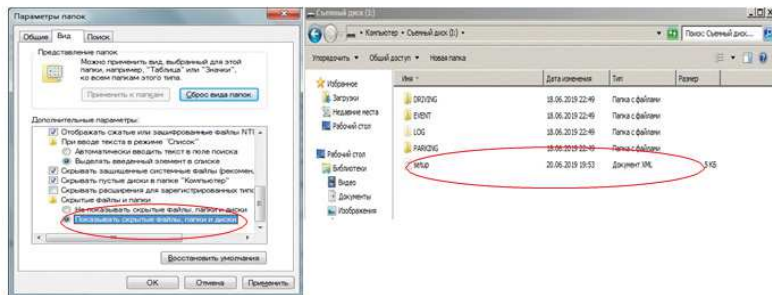
WARNING!

To ensure a successful device setting, please, ensure that only expert users perform the steps outlined below!

The Setup file is located on a Micro SD Memory Card.

The Setup.xml file is automatically created on the micro SD memory card when connected to the X-COP 9100s.

The Setup.xml file is hidden; and you need to show hidden files and folders in your operating system for its detection. Please, see an example in figures below.



Setup File

```

<!-- GPS SpeedLimit value=0 /> <!-- 0: km/h, 1: MI/H -->
<!-- Infinite mode settings -->
<item name="minImpactSens1" value="2" /> <!-- 0 = 30 (0: off) -->
<!-- Parking Mode Settings -->
<item name="pwautoenterable" value="false" />
<item name="pwautoenterTime" value="0" /> <!-- 0 - 30 (unit: minute) -->
<item name="pmpactSens1" value="3" /> <!-- 0 - 3 (0: off) -->
<item name="pmpenable" value="true" />
<item name="pmpdSens1" value="3" /> <!-- 1 - 3 -->
<!-- LCD Settings -->
<item name="polCdrProgress" value="10" /> <!-- 1 - 30 -->
<item name="polCdrOffTime" value="60" /> <!-- 0 = 60 (unit: Second) -->
<!-- Safeguard Setting -->
<item name="sgmatVoltage" value="12v" /> <!-- 12V, 24V -->
<item name="sgmatCalibrate" value="0d.8" /> <!-- -->
<item name="sgmatSafeVoltage" value="9.0" />
<!-- GPS POI Settings -->
<item name="poiAlarmenable" value="true" />
<item name="poiPolicePostenable" value="true" />
<item name="poiFakeAddressenable" value="true" />
<item name="poiAutoOdorIatenable" value="true" />
<item name="poiStreetNameHydromobileenable" value="true" />
<item name="poiStreetNameenable" value="true" />
<item name="poiFwdRadarenable" value="true" />
<item name="poiGPSPriority" value="true" />
<item name="poiRadiusSearchZone" value="500" /> <!-- 200, 300, ..., 800 (unit: m) -->
<item name="poiRadiusToleranceZone" value="200" /> <!-- 100, 200, 300, 400 (unit: m) -->
<item name="poiDetectionDistance" value="0" /> <!-- 0, 1, 300, 400, ..., 900 (unit: m) -->
<item name="poiMaxOverSpeedSetting" value="0" /> <!-- 0, 80, 90, ..., 130 (unit: km/h) -->
<item name="poiSpeedLimit" value="0" /> <!-- 0, 10 = 130 (unit: km/h) -->
<!-- Radar Settings -->
<item name="rdAlarmenable" value="true" />
<item name="rdMode" value="TURBO" /> <!-- CITY, HIGHWAY, TURBO, X-COP -->
<item name="rdBandenable" value="true" />
<item name="rdkandenable" value="WIDE" /> <!-- OFF, SUPER_NARROW, NARROW, WIDE -->
<item name="rdkandInTheCity" value="true" />
<item name="rdkandenable" value="false" />
<item name="rdUserBandenable" value="true" />
<item name="rdPrekakaandenable" value="true" />
<item name="rdMultiBandenable" value="true" />
<item name="rdFilterSignature" value="true" />
<item name="rdKafilter" value="true" />
<item name="rdCityBandSens1" value="3" /> <!-- 1 = 5 -->
<item name="rdCitykakaBandSens1" value="3" /> <!-- 1 = 5 -->
<item name="rdkand" value="WIDE" /> <!-- NARROW, WIDE -->
<item name="rdProg" value="true" />
<item name="rdKAPop" value="true" />
<item name="rdKARow1" value="true" /> <!-- (Freq. 33.400 ~ 33.700GHz) -->
<item name="rdKARow2" value="true" /> <!-- (Freq. 33.700 ~ 33.900GHz) -->
<item name="rdKARow3" value="true" /> <!-- (Freq. 33.900 ~ 34.200GHz) -->
<item name="rdKARow4" value="true" /> <!-- (Freq. 34.200 ~ 34.600GHz) -->
<item name="rdKARow5" value="true" /> <!-- (Freq. 34.600 ~ 34.800GHz) -->
<item name="rdKARow6" value="true" /> <!-- (Freq. 34.800 ~ 35.100GHz) -->
<item name="rdKARow7" value="true" /> <!-- (Freq. 35.100 ~ 35.400GHz) -->
<item name="rdKARow8" value="true" /> <!-- (Freq. 35.400 ~ 35.600GHz) -->
<item name="rdKARow9" value="true" /> <!-- (Freq. 35.600 ~ 35.800GHz) -->
<item name="rdKARow10" value="true" /> <!-- (Freq. 35.800 ~ 36.000GHz) -->
<item name="rdAlarmResetenable" value="true" />
<item name="rdAlarmResetenable" value="true" />
<item name="rdAutoRouteenable" value="true" />
<item name="rdAutoRoute" value="0" /> <!-- 0, 40 ~ 160 (unit: km/h) -->
<item name="rdSpeedLimit" value="50" /> <!-- 0, 10 = 130 (unit: km/h) -->
<item name="rdLegalOverSpeed" value="0" /> <!-- 0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20 -->
<!-- Language Setting -->
<item name="language" value="rus" /> <!-- rus, eng, lit -->
<!-- Factory Setting -->
<item name="FactoryReset" value="false" />

```

These settings allow you to configure the device thoroughly to your requirements. You can set functions in the Setup file, namely:

- Basic settings (video quality) -
<!-- Basic Settings -->
- Time zone settings -
<!-- Time Zone Setting -->
- G-Sensor settings -
<!-- Infinite Mode Settings -->
- Parking mode settings -
<!-- Parking Mode Settings -->
- Display mode settings -
<!-- LCD Settings -->

- Setting the adjustment for the input voltage measurement and its normal value as 12 V or 24 V (it is necessary in case of incorrect shutdown due to any power supply voltage drop to the pre-set threshold)
<!-- Safeguard Setting -->
- GPS receiver settings (setting of the false and/or dangerous zones ranges, enabling/disabling certain types of radars, etc.) - <!-- GPS POI Settings -->
- Bandwidth selection - <!-- Radar Settings -->, <!-- Band Selection Setting -->
- Bandwidth settings - <!-- PRO1 Setting --> и <!-- PRO2 Setting -->
- Language settings - <!-- Language Setting -->
- Reset to factory settings - <!-- Factory Setting -->

All settings have their own recording format tolerances:

- Some that have already been set as true or false, can be set only in this format. For example, Z-signature Filter enabling/disabling: <item value="true" name="rdFilterZSignature"/>

- Others (with a note on a possibility to enter data in numbers or letters) can be set directly by entering numbers or ready-made commands.

For example, the Max Speed setting: <item value="0" name="poiMaxOverspeedSetting"/>
<!-- 0, 80, 90, ... 180 (Unit: km/h) -->

PRO1, PRO2. The user can fully configure the hybrid using the PRO1 and PRO2 settings in the "Frequency Selection" mode (if needed).

Respectively, the user can set certain settings for PRO1 and completely different ones with PRO2 in the Setup file. This may be useful when the user often travels from one country to another where different types of radars are installed. After such configuration, you may just switch between PRO1 and PRO2, instead of adjusting your hybrid each time you go to a new country.

In the Setup file, this setting looks as follows:

```
<item value="SET" name="bandSelection"/>
<!-- SET, PRO1, PRO2 -->
<!-- PRO1 Setting -->
```

By selecting the setting of PRO1 or PRO2, the user can customize all the menu functions, including even individual frequencies of K-bands:

```
<item value="WIDE" name="pro1RdKBandEnable"/>
<!-- OFF, SUPER_NARROW, NARROW, WIDE -->
```

Where:

- SUPER NARROW = 24.110 ~ 24.125 GHz
- NARROW = 24.050 ~ 24.195 GHz
- WIDE = 23.900 ~ 24.250 GHz

Moreover, the user can make an even finer tuning of KA-band using the true or false values. This function is useful for those who use the hybrid in countries where KA-band police radar are installed.

```
<item value="false" name="rdKaNarrow1"/>
<!-- (Freq. 33.400 ~ 33.700GHz) -->
<item value="false" name="rdKaNarrow2"/>
<!-- (Freq. 33.700 ~ 33.900GHz) -->
<item value="false" name="rdKaNarrow3"/>
```

```
<!-- (Freq. 33.900 ~ 34.200GHz) -->  
<item value="false" name="rdKaNarrow4"/>  
<!-- (Freq. 34.200 ~ 34.600GHz) -->  
<item value="false" name="rdKaNarrow5"/>  
<!-- (Freq. 34.600 ~ 34.800GHz) -->  
<item value="false" name="rdKaNarrow6"/>  
<!-- (Freq. 34.800 ~ 35.160GHz) -->  
<item value="false" name="rdKaNarrow7"/>  
<!-- (Freq. 35.160 ~ 35.400GHz) -->  
<item value="false" name="rdKaNarrow8"/>  
<!-- (Freq. 35.400 ~ 35.600GHz) -->  
<item value="false" name="rdKaNarrow9"/>  
<!-- (Freq. 35.600 ~ 35.840GHz) -->  
<item value="false" name="rdKaNarrow10"/>
```

Thank you for choosing Neoline products!