

Teltonika Dualcam testing instructions

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1. Wiring connection

Connection of Teltonika Dualcam to the FMX125 should be done with 4 wires that are attached to the Dualcam. These wires include Power & Ground wires which are connected directly to the power supply and Tx and Rx wires which should be connected to FMX125 PIN 3-Rx and 4-Tx. Important to note Dualcam's RX wire should be connected with Tx cable of the FMX125 device and Tx cable should be connected to the Rx input. **When testing the devices on the table, please connect power and ground cables directly to power supply.** The difference of connection between tests on table and connection to vehicle is explain further below.

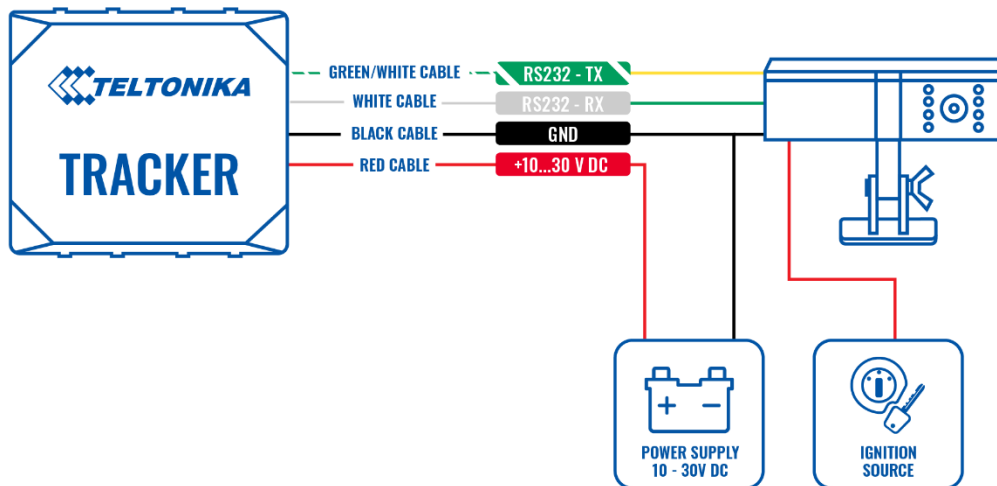



Figure 1 Performing tests on table with power supply

When connecting Dualcam to the vehicle, the user has to ensure that Dualcam is not directly connected to the battery of the vehicle as it will get direct power input which will result in the camera staying on all the time and will not shut down until the battery is empty. In some cases, vehicle batteries could be empty within 1 day of connection and therefore, it is important to understand that the Dualcam should be connected to the ignition wire or relay which will either provide power or cut it off the Dualcam upon vehicle ignition state.



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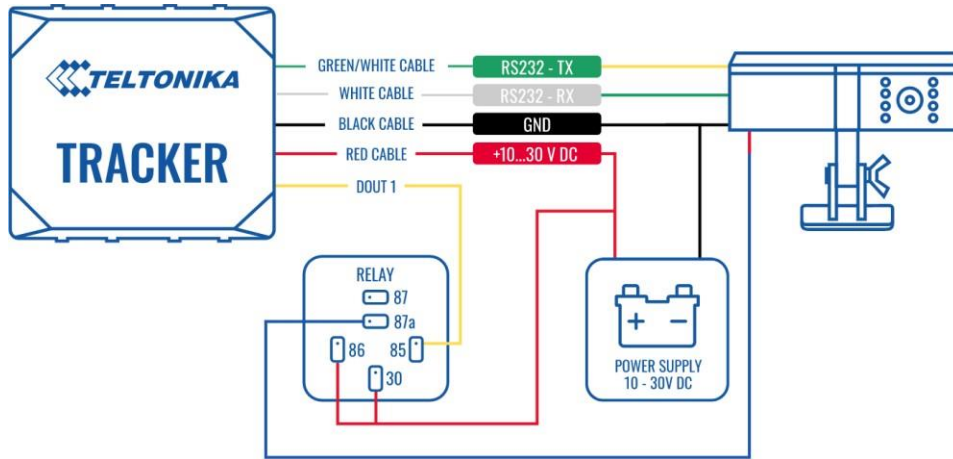
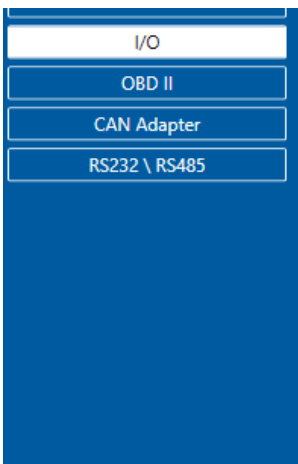


Figure 2 Performing connection directly on the vehicle

Once the FMX125 device and Dualcam is connected on the table, turn on the power supply and the Dualcam should make a tick noise for 1 time, this will indicate that the camera went online and is receiving power from the supply. Once this is done, connect the micro-USB cable to the FMX125 and the other end to the PC and open the designated configurator for Dualcam configuration.

Once the setup is finished, navigating to IO settings (picture below), you will be able to see the state of the camera here:



Battery Level %	%
BT Status	
UL202 Fuel Level	
UL202 Status	
Pulse Counter DIN1	
Frequency DIN1	Hz×10
Coordinates ISO6709	
Ignition On Counter	
Rear Camera State	
Front Camera State	

Setting the camera state priority to low will report camera state directly to server and also TF card status. These are the values these parameters are able to show:

- 0 - Camera not detected
- 1 - No card
- 2 - Card mount failed
- 3 - Card mounted
- 4 - Card faulty

2. Configuration

It is important to turn on codec 8E at the start of the configuration as it is required for the extra information of AVL ID's that are being transferred by the device. This setting can be found under System tab in the Teltonika Configurator.



Please ensure the FMX125 device has the latest FW to support Dualcam which is currently 03.27.13.Rev.362 and configurator version: Teltonika.Configurator_1.7.38_E.DualCamSupport_R.12 which will allow access to the Dualcam settings in the RS232 tab. **If you have a different FW version for your device, please contact your sales representative in order to receive the newest firmware and configurator for your device.**

The screenshot displays the configuration interface of the Teltonika Configurator. On the left is a vertical menu with various settings categories. The 'RS232 \ RS485' option is selected at the bottom. The main area shows the 'RS232 Mode' configuration. Under 'External UART Mode', 'RS232' is selected. Below that, the 'RS232 Mode' is set to 'DualCam'. To the right, the 'RS232 Settings' window is open, showing 'Baudrate' and 'Parity' options. In the 'Baudrate' table, '115200' is selected. In the 'Parity' table, 'None' is selected.

Disable	RS232
RS485	

Mode	
Log Mode	NMEA
LLS	LCD
RFID HID	RFID MF7
Garmin FMI	TCP/UDP Ascii
TCP/UDP Binary	TCP/UDP Ascii Buffered
TCP/UDP Binary Buffered	Delimiter
Mercury C4	UL202 Fuel Sensor
DualCam	

Default	1200
2400	4800
9600	14400
19200	38400
57600	115200

Default	None
Odd	Even

If you are unable to see this selection in your configurator, please check the configurator version and the FW of the device.

Once the Dualcam is selected, possible options will appear for selection which will allow to set the configuration of the device. Different resolution and compression can be selected for the picture quality, in some cases, when the picture quality is low, it is beneficial to play around with image resolution and compression in order to see which settings would suit the user the most. Another important factor is OSD Display which shows date and time when the video/photo was taken. In some cases, if users from different regions are facing time issues and the hours differ from the actual hours the video or photo was taken, they would need to check the Camera Time Zone parameter and set it to their applicable time zone.

DualCam Feature Settings

Camera Picture Resolution	
160 x 120	320 x 240
640 x 480	1280 x 720
1920 x 1080	

Camera Picture Compression

OSD Display

Disable	Enable
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Video Frame Rate

Camera Time Zone

In regards to picture resolution, Teltonika Telematics cannot advice on the most suitable resolution as it is heavily dependent on the user’s use case scenario and their requirements and therefore, please proceed to this wiki page ([here](#)) where image resolution, sizes and transfer speeds are described.

Image Settings

Periodic Image Sending

Front	Rear
Sending interval (s) <input type="text" value="600"/>	

Image Sending Trigger

DIN1	DIN2
Crash	Towing
Idling	Geofence
Unplug	Green Driving

Periodic image sending and image triggering are also selectable parameters which can be set to automatically send images into the designated server or a trigger can be used to send photos taken at the time the trigger was initiated.

Testing triggers can be done by selecting any of the applicable triggers, either DIN’s or features and manually activating them by either adding DIN to a power output on the power supply or activating some of the features like Crash. Where the user lightly hits the device on to a table or a hand in order to activate gyroscope which in turn activates Crash feature and the image

will be taken. Some of the other features can be tested inside of the vehicle, like Green Driving. Please make sure that the these features are actually turned on in “Features” tab and configured.

Video Settings

Video Sending Trigger

DIN1	DIN2
Crash	

Video duration before trigger (s)

Video duration after trigger (s)

Video Source by Trigger

Trigger	Camera Source
DIN1	Front and Rear
DIN2	Front and Rear
Crash	Front and Rear

Video settings do not have periodic sending, however Video sending triggers can be used in order to initiate video record and send the footage to the designated server. Same as Photo settings, DIN1 and DIN2 can be used to initiate the trigger and start the camera recording. Feature like Crash can again be initiated by gently hitting the device with a hand or on a table. It is also possible to test different cameras with different triggers, just select applicable source for the desired trigger.

3. Server connection

Once the FMX125 device is setup with the required settings, a server has to be entered which will allow the user to send the videos/photos to their desired server. This can be tested by entering server IP address and port number into the requested fields and activating a trigger or setting up periodic image sending.

DualCam Scenario Settings

Camera Scenario Mode

On Ignition	Always
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DualCam Server Settings

Domain

Port

Camera scenario mode has 2 selectable parameters which are “On Ignition and Always”. **On Ignition** parameter sets the camera to send data only when there is ignition in the **vehicle** or whether it is set up in the Systems tab as power source and **power supply** connected when testing on the table. This can be tested by setting device ignition ‘low voltage’ a bit lower than the actual voltage currently being supplied to the device. This means that when there is enough power, ignition will turn on and the camera will keep on recording sending data records to the server and once ignition turns off, camera will start saving records in itself. **Always** parameter means that as long as there is power no matter whether the ignition status is ON or OFF to the FMX125 device, **IF** periodic image sending is set up **OR** SMS command is issued requesting video/photo the camera will keep on sending records to the server. Please note, this is not the parameter to set the camera working status, it is meant for data sending only so if the camera is directly connected to the battery in the vehicle, it will drain its power constantly and will drain vehicle’s battery.

Ignition Settings

Ignition Source

DIN 1	Accelerometer
Power Voltage	Engine RPM
High Voltage (mV)	<input type="text" value="30000"/>
Low Voltage (mV)	<input type="text" value="13200"/>

4. SMS/GPRS commands

Specific commands can be issued to camera in order to test whether it is correctly working:

camgetver – is a command that can be issued to the camera in order to find out the versions of both cameras. Testing here is important because if the FW versions of the cameras are not the same, flashing Dualcam camera firmware is required as some of the features might not work. Also, because there are two cameras, two versions are returned. The complete response would look like this: **Front camera V2.2.3. Rear camera V2.2.3 OR Front camera V2.2.2. Rear camera V2.2.2.** A failed response from the camera would be: **The front camera camgetver failed. The rear camera camgetver failed.** In this case, the camera will require flashing, it is broken or wiring is not connected appropriately.

camreq: <file_type>,<file_source>,<timestamp>,<duration> ,<domain>,<port> - is a command that sends video/photo requests to the FMX125 device and the device will start taking either the video or photo and send it to the designated server. Testing here can be performed by requesting either video or photo and by selecting the most suitable source which is either front, back or both directions. A secondary server can also be tested by entering different Domain and Port number in the message. If requesting a photo, duration has to be left is 0. The general structure of this command is as follows:

<file_type>

0 - Video

1 - Photo

<file_source>

1 - Front camera

2 - Rear camera

3 - Both cameras

<timestamp>

Unix timestamps in decimal (not required for photo download)

<duration>

Video duration in seconds from provided timestamps (not required for photo download), (max 30 sec)

Structure examples:

camreq:<file type>,<file source>(if video, add ",<timestamp>,<duration>)

However, if there is a need to send to the specific server without configuring, you can add two extra parameters.

The complete structure:

camreq:<file type>,<file source>(if video, add ",<timestamp>,<duration>),<domain>,<port>

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For example: **camreq:0,1,1624960616,5,212.59.13.226,7160**

5. Credits

If you have any further questions/issues with connection of the Dualcam and FMX125 device, please contact your direct sales representative OR create a VIP Helpdesk query where a technical support member will be assigned to you.

After completion of the testing, please provide feedback to your direct sales representative, we would appreciate your contribution to improving our services and quality of provided information.

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