CT2020

Connected DVR

Installation Guide

Connected DVR Installation Guide

Introduction

This manual has been designed to guide you through the setup configurations, features & functions of the CT2020.

The CT2020 telematics video system is a forward facing GSM enabled High Definition (HD) vehicle camera, designed to be universally fitted to any vehicle. The CT2020 offers full telemetry data and HD video transmitted over the mobile phone network. The CT2020 is an ignition live hard wired camera designed to remain fitted in the vehicle.

The CT2020 transmits its speed, GPS position and telemetry data at pre-configured intervals between 1 and 300 seconds to a designated server. In the event of a collision or event activation which is a configurable parameter the unit automatically transmits all of its data for that event. The video footage and clarity is 720 progressive HD and is of highest quality, the footage can then be remotely downloaded to a secure server where it is stored should the client request the event driven video file following a collision.

The CT2020 modem is capable of GSM data transmission utilizing UMTS, EDGE & GPRS, this means all parts of the major GSM infrastructure can be accessed. The SIM card fitted to the device operates on a VPN (Virtual Private Network) ensuring a secure & stable data connection for the CT2020 devices to the specified server.

To enable a fully auditable service the data from the CT1000 once stored on the server can only be accessed by authorized personnel, who are designated their own username and password for the server access. Access to the event footage is available by HTTP or from your local network.

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Contents of box

CT2020

Car Shield

Power cable

Read Me First!

• Please read this installation guide carefully before installing the CT2020.

• The descriptions for installation shown in this manual are for use with the default configuration settings.

• Software images and screenshots shown in this manual may differ in appearance from the software being used dependant on the version in use.

• The stability of the GSM transmission of the CT2020 unit may vary from country to country dependant on the infrastructure employed by carriers and their reception capabilities.

• Every effort has been made to ensure the information contained within this guide is accurate and relevant.

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Safety

To prevent damage, electric shock or fire

- Do not use broken or damaged cables
- Do not touch the CT2020 power cable with wet hands
- Do not place or submerge the CT2020 in water
- Do not use non manufacturer approved power supplies or cables
- Do not use the CT2020 if the built in Lithium battery is leaking

Note!

Before turning the unit on please ensure you have all the components required for the installation of the CT2020.

Installation

The installation process of the CT2020 should be as follows:

1. Securely fix the CT2020 in position
2. Connect power to the CT2020
3. Complete calibration of the CT2020

Camera/Shield Mounting

The CT2020 is a universal in-vehicle camera and has been engineered and designed for all vehicle types. Due to vehicle screens having different inclines and angles the CT2020 has been produced with shielding. The shields protect the camera lens from any glare from internal illumination, i.e. instrument panel/dash lighting.

The shield is designed for use in vehicle windscreens for passenger cars, LCV's, Vans, this shield has been tested in most manufacturers vehicles. The CT2020 shields are equipped with a self-adhesive black tape of the highest quality on the bottom and sides of the shield, this ensures the CT2020 can be stuck safely and securely to a glass surface.

Ideally, the CT2020 should be mounted in the middle of the windscreen to provide optimum visibility. However, there is certain criteria from VOSA to consider depending on the type of vehicle.

Shield Installation

First assemble the CT2020 and shield but do not tighten the locking cap!

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CT2020 & Shield

CT2020 & Shield interface clips

CT2020 Locking clip

Assembled CT2020

Once the CT2020 is assembled place the unit in the desired position on the windscreen. Mark the positioning within the vehicle and then disassemble the unit.

1. Select the position within the windscreen of the vehicle.

2. Clean the area on the windscreen (if using a liquid cleaner wait for the glass to dry)

3. Remove the backing tape and stick the shield to the window. Press firmly until the shield is fixed to the windscreen

4. By looking at the windscreen from the front of the vehicle you will be able to see the adhesive bonding to the screen

It is vital the IT1000 is not connected to the power during this process!!

Place the camera within the shield and ensure the two connector blocks engage with the CT2020. Once the CT2020 is engaged with the shield it should be safe to temporarily remove your hand, the shield will hold it in place.

The next step is to tighten the locking clip, this will fully connect the CT2020 to the shield. The CT2020 is secured to the shield by screwdriver. The fixing to the shield can vary.

How To Configure The CT2020

In most instances the camera will come with the text file pre-installed. However the setup process for the CT2020 is one of the easiest developed for 3G video transmission and simply requires a text file document created for the camera unit. The text file is taken from a template and copied from your PC or Laptop to the micro SD card. Below is an example of the txt file required and can be used as a template for the configuration of the CT2020, the txt file can be opened and edited in Notepad.

Installing SIM & Micro SD Cards

It is recommended that you only use the Micro SD card and the SIM card supplied with the CT2020.

Voltage/Power

The CT2020 has a voltage range of 9-36v, when installing the CT2020 you must ensure you connect to a suitable power source within the vehicle. The power cable can be cut to length if required.

Device One Time Set Up

Once the CT2020 has been secured in position connect the power to the camera and turn the ignition on, the camera will then display a sequence of lights. (See table below)

LED	Status	Reason
CHARGE (red/green)	Continuous red	On charge
	Continuous green	Charge finished or trickle charge
	Blinking red/green	Over temperature, charge stopped
DEVICE STATE (cyan/blue)	Continuous cyan	Ready
	Blinking cyan	Transmitting video to server
	Continuous blue	Firmware upgrade
NETWORK (magenta)	Triple blink magenta	Connected to wifi hotspot
	Double blink magenta	Not connected, SIM card not inserted
	Blinking magenta	Connected to cellular network
	Continuous magenta	Connected to server

Specifications

B. Hardware Spec.				
A.1	**Dimension**		Target 45mm (Diameter) and 120mm (Length)	
A.2	**Processor**		1.2GHz Quad core CPU	
A.3	**RAM**		512 DDR3	
A.4	**Nand Flash**		128G bytes eMMC	
A.5	**Buttons**		3 hole (recovery, reset, power)	
A.6	**USB**		5pin USB connector	
A.7	**SD Card**		Micro SD slot x 1	
A.8	**Speaker**		Build-in	
A.9	**Camera**		Sensor	OV010635
			Resolution	1028p * 720p
			Frame rate	25fps
			Sensitivity	3650mV/Lux-sec
			Dynamic	115dB
			Angle of aperture	146º
A.10	**Video recording**		Storage	Internal flash
			File Format	FAT32
			Storage Card	SD Card (up to 32GByte) (optional)
			Dual Streaming	Continously and event driven
			Event Trigger	Internal g-force-sensor
			Length	Configurable up to 30s pre- and 120s post event
			Transmission	3G upload to server
			High Event Video Handling / Video High Events	Stored to internal memory / Automatic upload to server
			Low & Medium Event Video Handling / Video Low & Medium Events	Stored to internal memory / Upload to server manually
			Security during Video Transmission	TLS-encryption during data transmission
A.11	**G-Force sensor**		Axis	3
			Accident Level	Adjustable 1g - 2g

			Trigger level	3 level (low, medium, high)
			Calibration	Auto adjustment after installation
			Configuration	Remotely over the air
			Sampling rate	50Hz - 1600Hz
A.12	**GPS**		chipset	Ublox MAX-8Q
			system	GPS/GLONASS
			Update rate	Max 5Hz
			Antenna connector	internal
A.13	**3G**		chipset	Telit HE910
			Versions	UMTS
			Max. data rate upload	UMTS 5.2Mbit
			Voice	support
A.14	**BT**		Yes	
A.15	**Wifi**		Yes	
A.16	**gyroscope**		yes	
A.17	**Battery**		1500mAh	
A.18	**Operating temp**		-15 to 70 degree	
A.20	**waterproof**		No IP standard	
A.21	**Drop distance**		1m	
A.22	**Connector**		Molex 6-Pin MicroFit	
	Input		Panic input or event trigger	
	GND		GND	
	RX		TTL	
	TX		TTL	
	Ignition		Input up to 32V	
	Power		Vcc/GND (9-32V)	

3G Vehicle Camera Installation Guide

Accessories optional

Hub Box

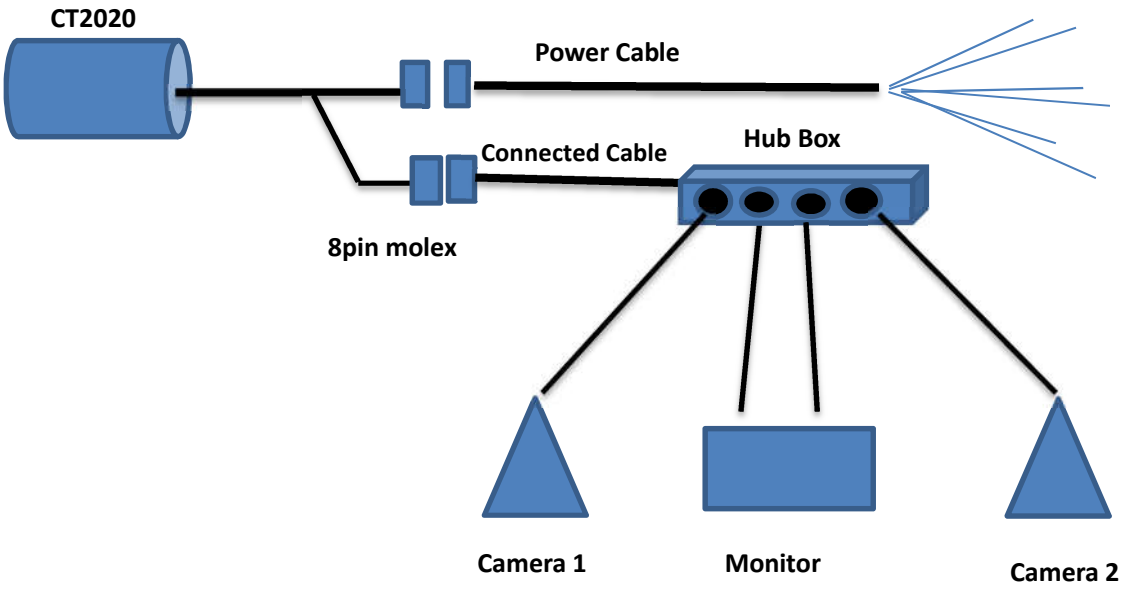
Camera

Connected Cable

8pin molex connector to connect to CT2020
(Vcc (9-32V), GND, D+, D-, D+, D-, ignition, GPIO)

The Hub Box has fixed connector (8 pins molex, 2 camera input and 2 video out for monitor or MDT720)

Full Solution



FCC Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

FCC Warning

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

NOTE 1: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
-Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
-Consult the dealer or an experienced radio/TV technician for help.

NOTE 2: Any changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

IC Radiation Exposure Statement:

This equipment complies with IC RSS-102 radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

IC WARNING

This device complies with Industry Canada's licence-exempt RSSs. Operation is subject to the following two conditions:
(1) This device may not cause interference; and
(2) This device must accept any interference, including interference that may cause undesired operation of the device.

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Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes: (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.