KOMMANDER™ — QUAD-CORE COMPUTER
USER GUIDE

KOMMANDER™

KMN-ORD-SE

1 REVISION

Description	Author	Revision	Date
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2 COPYRIGHT

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3 CONTENTS

5

4 DECLARATION OF CONFORMITY

Cyberkar® Systems declares that the products FDQ and FMC conform with the commission directives 72/245/EEC, 2004/104/EC, 2006/28/EC and E/ECE regulation 10 revision 4.

Key Flag marking on a product is a proof that the Association for Finnish work has verified that the product has been produced in Finland. To be defined as such, at least 50% of work associated with the product must be done in Finland.

CE Marking on a product is the manufacturer's declaration that the product complies with the essential requirements of relevant European health, safety and environmental protection legislation.

The FCC marking indicates that the product has passed verified electromagnetic and transient testing and does not exceed the limits set for electromagnetic radiation.

The WEEE-symbol has to be on all electronic devices to act as a reminder that this product should be recycled, when the lifespan of this product has come to an end.

The E/EC mark is a numerical code that indicates where the product has been approved and the approval criteria. It proves that the product has passed certified laboratory tests according to relevant directives.

6

5 DESCRIPTION

This manual contains information about the use and servicing of FQD and FMC On-board Computers. Please read this manual carefully before using the computer. The company develops its products constantly, therefore we reserve the right to make changes to the products described in this manual and its instructions without prior notice.

A wide range of accessories are available for Cyberkar® On-Board Computers. Ask your provider for current drivers, manuals, software and instructions for the installation.

Every unit sold with the preinstalled OS has a C:\Sunit\Support folder in it, which contains:

- Support\Drivers
- Support\Manuals
- Support\Utilities

6 IDENTIFICATION DATA

The Central Processing Unit has an identification label attached to the top of the unit. The following information can be found from the label:

- Unit model and type
- ASSY version
- Serial number
- Key Flag marking
- CE and FCC marking
- WEEE recycling mark
- E/ECE mark
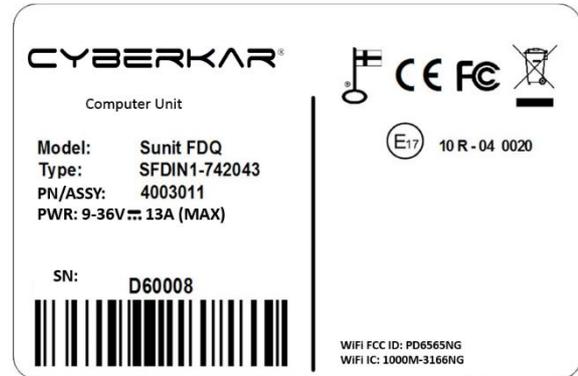
The date of production can be found in the warranty seal, which is attached to the side of the unit:

- Date: Production year and week
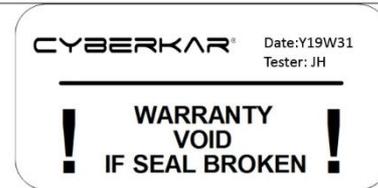
Product Labels

The display units have an identification label situated at the back of the unit, below the display connector. The following information can be found from the label:

- Unit model and type
- ASSY version
- Date: Production year and week
- Serial number

The identification labels contain important information, so please do not remove them.

7 PRECAUTIONS AND SAFETY

7.1 Traffic safety

Careless use of the computer endangers traffic safety. Please stop the vehicle when concentrating on using the computer.

To prevent accidents, keep all peripheral devices in their mounts while driving.

7.2 Installation and service

Only an authorized service provider is allowed to install, repair or open the device. Unauthorized repair or opening of the device may cause faulty operation and revoke the warranty. Incorrect wiring may cause interference in insufficiently protected electrical systems.

7.3 Connecting peripherals

The compatibility of peripheral devices should be checked with the product manufacturer or retailer of the device. Peripherals should have EU-directive compliant EMC/EMI shielding.

8 HARDWARE CONFIGURATION

The Cyberkar® On-Board computers are certified as part of the vehicle electronics system and are made to be mounted in the vehicle. The computers are well suited to the vehicle environment, with ease of use, automated control and low power consumption.

8.1 Configuration of the On-Board computer system

In its most basic form, the Cyberkar® On-Board computer system consists of the following parts;

Central Processing Unit, Display, Display cable connecting the two and vehicle harness.

CPU has integrated LAN, 2xCAN, IO, Audio AMP, UPS and GNSS.

Depending on the application requirements, the configuration may also include;

On-Board Computer System

GNSS/LTE-antenna, Wi-Fi antenna, Human Interface devices like mouse and keyboard, USB extension cables or USB HUB.

 The CPU also has internal options;

LTE-modem, 4xAnalog Video input, 4xCOM and 802.11b/g/n/ac Wi-Fi.

Operating voltage range: +11 - +15VDC

The Central Processing Unit will shut down automatically at 11VDC voltage to avoid draining the vehicle battery. When using with other voltage systems contact support support@cyberkar.com.

8.2 Central Processing Unit
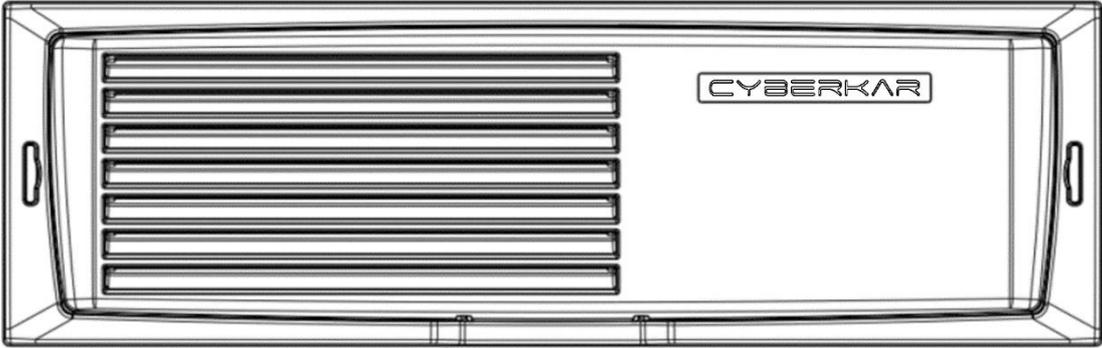
Central Processing Unit with front panel

The front panel removal instructions are on *Service section*.
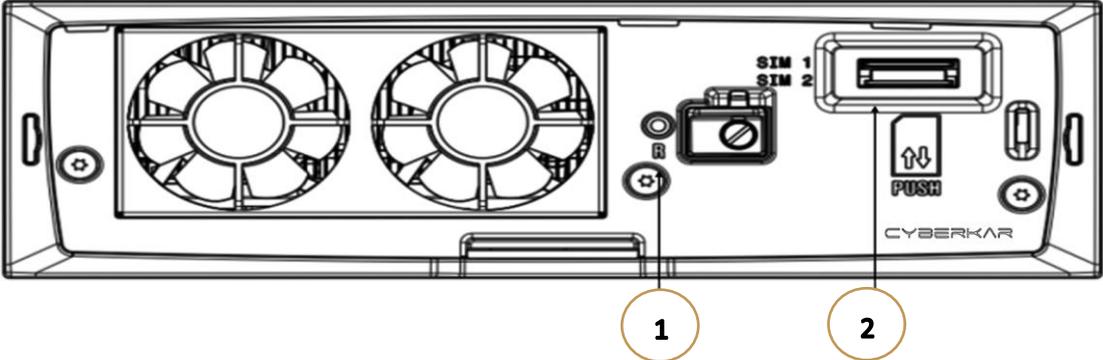
Central Processing Unit without front panel

1. Reset button
2. SIM-card slot

8.3 Connections
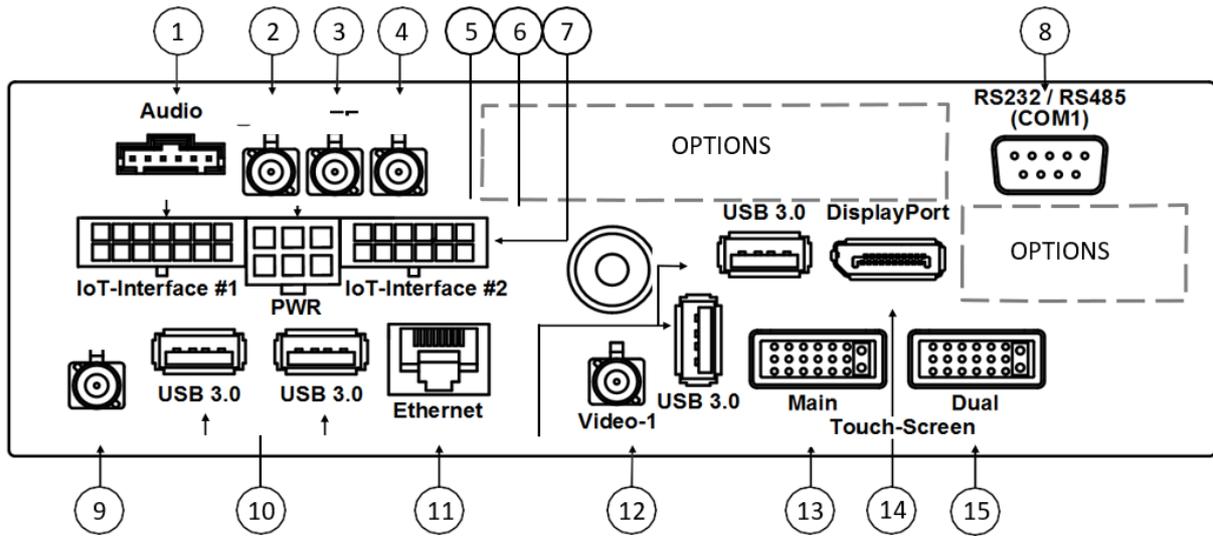
Connections

1. Audio ln/Out connection.
2. GNSS-antenna connector (blue).
3. LTE-antenna connector (red). (The connector is mounted, even if the LTE-modem is not installed)
4. LTE-antenna secondary connector (orange). (The connector is mounted, even if the LTE-modem is not installed)
5. Vehicle interface connection; IoT-Interface #1; 2xCAN, 1xAIn, 4xDI-In, 2xDO-Out.
6. Vehicle interface connection; PWR; Supply voltage, IGN.
7. Vehicle interface connection; IoT-Interface #2; PA-Out, 3xAIn, 3xDI-In, 2xDO-Out.
8. 1 x RS232/485 serial connection.
9. Wi-Fi antenna connector (brown). (The connector is mounted, even if the Wi-Fi module is not installed.)
10. 4xUSB3.0 connectors.

11. LAN connection.
12. Analog Video In connector (gray).
13. Main Cyberkar® touch-screen connector.
14. DisplayPort-connector.
15. Dual Cyberkar® touch-screen connector.

The following optional connections are available:

16. Bluetooth antenna connection.
17. 3 x RS232/485 serial connections.
18. 3 x Video-In.

Optional Connections

12
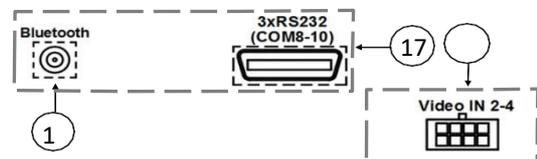
8.4 Connection diagram

12 or 24 Volt System

Ignition key

FUSE 1A

Battery – +12/24V

IGNITION
Connect to IGNITION ON

POWER IN
Connect to +8-29V

FUSE 10A

GROUND
Connect to vehicle GND

GND

3003043 Power Cable

3003046 I/O Cable
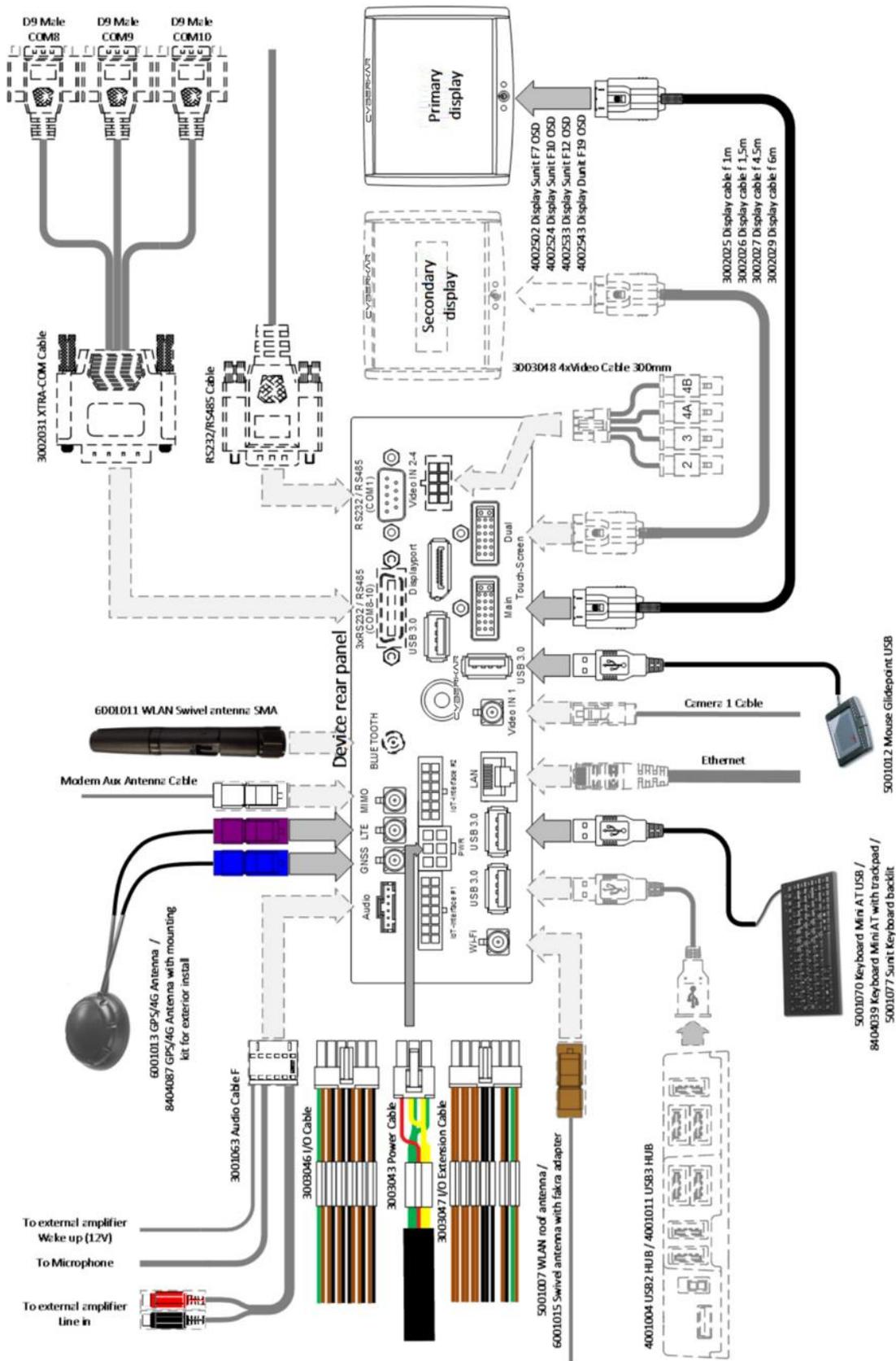
3003047 I/O Extension Cable
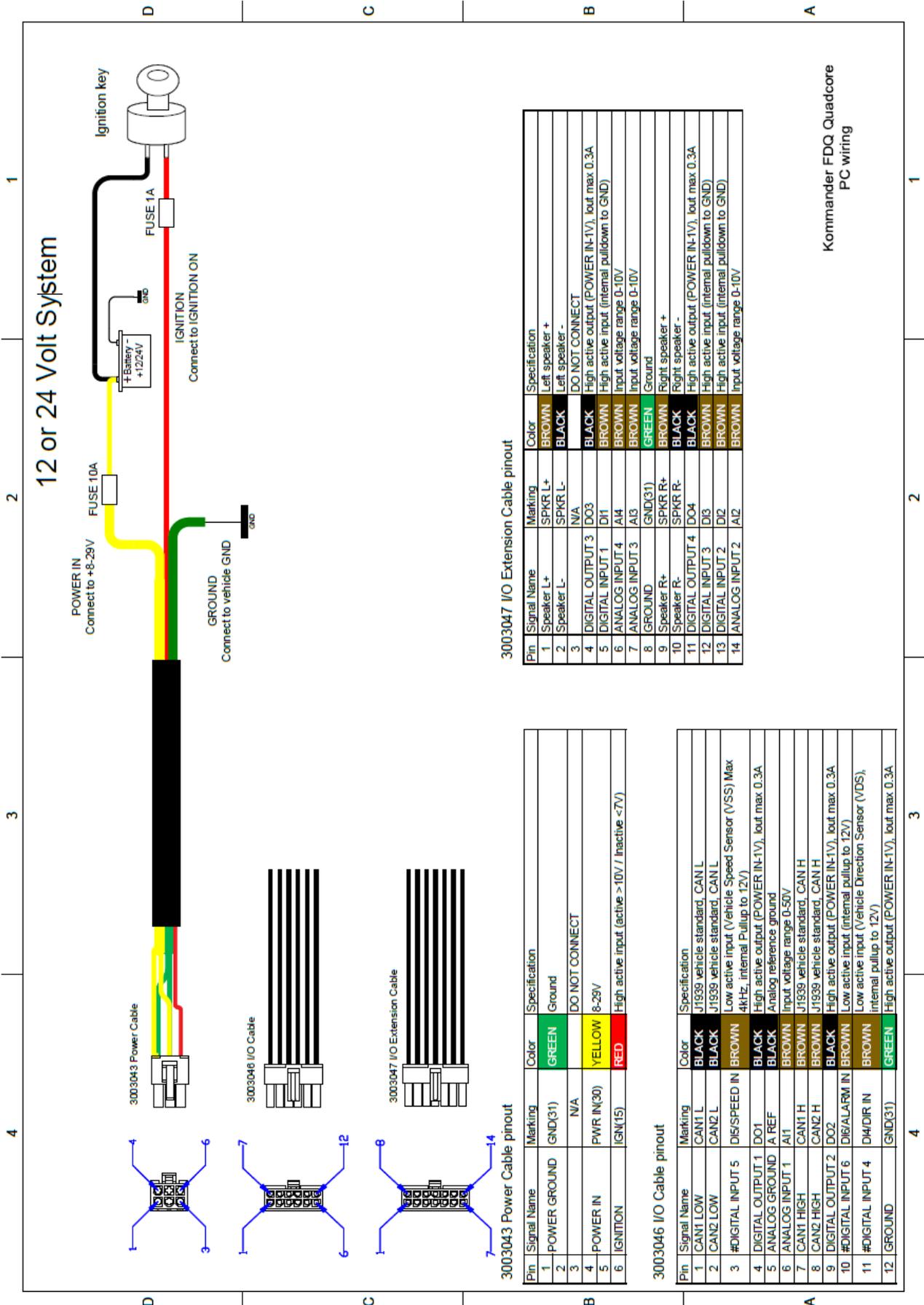
3003047 I/O Extension Cable pinout

| Pin	Signal Name	Marking	Color	Specification
1	Speaker L+	SPKR L+	BROWN	Left speaker +
2	Speaker L-	SPKR L-	BLACK	Left speaker -
3		N/A		DO NOT CONNECT
4	DIGITAL OUTPUT 3	DO3	BLACK	High active output (POWER IN-1V), Iout max 0.3A
5	DIGITAL INPUT 1	DI1	BROWN	High active input (internal pulldown to GND)
6	ANALOG INPUT 4	AI4	BROWN	Input voltage range 0-10V
7	ANALOG INPUT 3	AI3	BROWN	Input voltage range 0-10V
8	GROUND	GND(31)	GREEN	Ground
9	Speaker R+	SPKR R+	BROWN	Right speaker +
10	Speaker R-	SPKR R-	BLACK	Right speaker -
11	DIGITAL OUTPUT 4	DO4	BLACK	High active output (POWER IN-1V), Iout max 0.3A
12	DIGITAL INPUT 3	DI3	BROWN	High active input (internal pulldown to GND)
13	DIGITAL INPUT 2	DI2	BROWN	High active input (internal pulldown to GND)
14	ANALOG INPUT 2	AI2	BROWN	Input voltage range 0-10V

3003043 Power Cable pinout

Pin	Signal Name	Marking	Color	Specification
1	POWER GROUND	GND(31)	GREEN	Ground
2		N/A		DO NOT CONNECT
3				
4	POWER IN	PWR IN(30)	YELLOW	8-29V
5				
6	IGNITION	IGN(15)	RED	High active input (active >10V / Inactive <7V)

3003046 I/O Cable pinout

Pin	Signal Name	Marking	Color	Specification
1	CAN1 LOW	CAN1 L	BLACK	J1939 vehicle standard, CAN L
2	CAN2 LOW	CAN2 L	BLACK	J1939 vehicle standard, CAN L
3	#DIGITAL INPUT 5	DI5/SPEED IN	BROWN	Low active input (Vehicle Speed Sensor (VSS) Max 4kHz, internal Pullup to 12V)
4	DIGITAL OUTPUT 1	DO1	BLACK	High active output (POWER IN-1V), Iout max 0.3A
5	ANALOG GROUND	A REF	BLACK	Analog reference ground
6	ANALOG INPUT 1	AI1	BROWN	Input voltage range 0-50V
7	CAN1 HIGH	CAN1 H	BROWN	J1939 vehicle standard, CAN H
8	CAN2 HIGH	CAN2 H	BROWN	J1939 vehicle standard, CAN H
9	DIGITAL OUTPUT 2	DO2	BLACK	High active output (POWER IN-1V), Iout max 0.3A
10	#DIGITAL INPUT 6	DI6/ALARM IN	BROWN	Low active input (internal pullup to 12V)
11	#DIGITAL INPUT 4	DI4/DIR IN	BROWN	Low active input (Vehicle Direction Sensor (VDS), internal pullup to 12V)
12	GROUND	GND(31)	GREEN	High active output (POWER IN-1V), Iout max 0.3A

Kommander FDQ Quadcore
PC wiring

14

8.5 Display

8.5.1 7″, 10″ and 12 ″ Display Buttons and Indicators

Front of the screen

④

Back of the screen
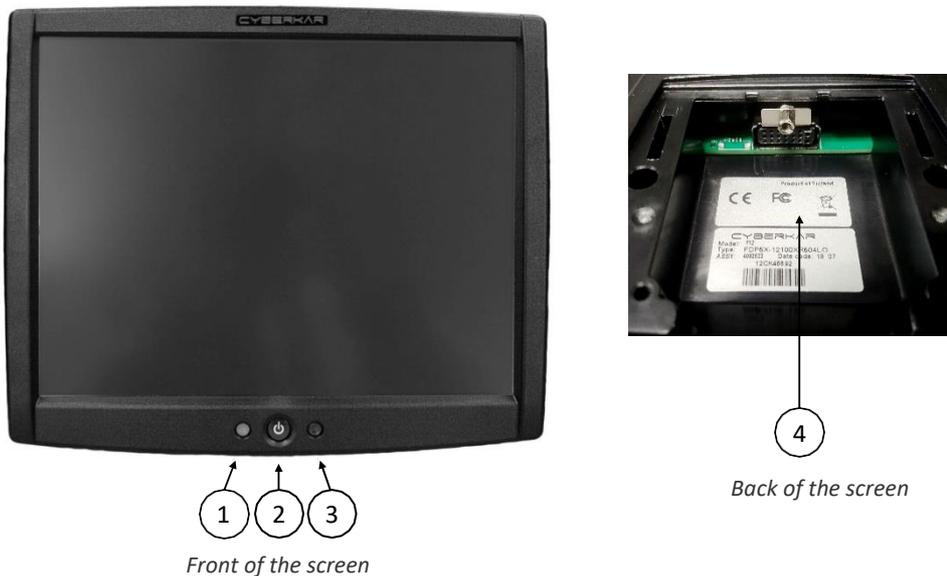
1. RGB-LED, Indicates the current state of the Computer

    - Blinking green; Computer is starting up.
    - Continuous green; Computer is running.
    - Blinking yellow; Computer is using the internal battery (UPS), no main power available.
    - Continuous blue; Computer is running, displays backlight is turned off.
    - Blinking orange; Warning, cause is reported with an audible fault-code.
    - Continuous red; Alarm, cause is reported with an audible fault-code. The fault-code key is on corresponding section.

2. Power and brightness adjustment button
    - The computer can be started by pressing this button.
    - While the computer is running, brightness can be controlled;
        o The backlight can be turned on or off by tapping the button once.
        o Access minimum brightness adjustment by 2 short taps. Additional taps will increase the minimum brightness, until a longer beep announces that maximum brightness has been reached. The next tap will reset the minimum brightness of the display back to the lowest level.
        o If the button has not been touched for 3 seconds, it will exit minimum brightness adjustment.
    - The computer can be shut down by pressing the button for 3 seconds. It is also possible to Force shut down by pressing the button for about 30 seconds. Please note! Force shut down is not recommended. Only use force shut down in an emergency, if the operating system does not respond and there is no other way to turn off the computer.
3. LDR-sensor for automatic brightness adjustment
    - The internal management system adjusts brightness according to the readouts from this sensor.
4. Display cable connector

15

8.5.2 19 ″ Display Buttons and Indicators

Back of the screen

Front of the 19-inch screen

Multifunctional button

1. OPTION: 12VDC additional supply voltage-connector
   - If the display unit includes a chain feature, each unit must be connected to its own 12VDC supply voltage. The chain feature means that it is possible to connect the displays and show the same image in all of them using the connecting cable.
2. OPTION: Display cable connector, signal out
   - Connect the next display to this connector.
3. Display cable connector, signal in
   - Connect the Central Processing Unit to this connector or signal from another display.
4. RGB-LED, Indicator for the current state of the Computer
   - Blinking green; Computer is starting up.
   - Continuous green; Computer is running.
   - Blinking yellow; Computer is using the internal battery (UPS), no main power available.
   - Continuous blue; Computer is running, displays backlight is turned off.
   - Blinking orange; Warning, cause is reported with an audible fault-code.
   - Continuous red; Alarm, cause is reported with an audible fault-code. The fault-code key is on corresponding section.
5. LDR-sensor for automatic brightness adjustment
   - The internal management system adjusts brightness according to the readouts from this sensor.
6. Power and brightness adjustment button
   - The computer can be started by pressing this button.
   - While the computer is running, brightness can be controlled;
     o The backlight can be turned on or off by tapping the button once.
     o Access minimum brightness adjustment by 2 short taps. Additional taps will increase the minimum brightness, until a longer beep announces that maximum brightness has been reached. The next tap will reset the minimum brightness of the display back to the lowest level.
     o If the button has not been touched for 3 seconds, it will exit minimum brightness adjustment.

16

- The computer can be shut down by pressing the button for 3 seconds. It is also possible to *Force shut down* by pressing the button for about 30 seconds. Please note! *Force shut down* is not recommended. Only use *force shut down* in an emergency, if the operating system does not respond and there is no other way to turn off the computer.

9 USING THE COMPUTER

The wiring diagram is in the corresponding section, but more complete instructions for installation and connecting peripherals can be found in the Installation manual.

9.1 Startup and shut down

9.1.1 Manual on-off

Press the power button on the display to start up the computer.

Computer can be turned off by pressing the power button for 3 seconds or by the operating system shut down feature.

9.1.2 Automatic on-off

With automatic on-off feature, the computer will turn on and off when the vehicle is on use. This is done by measuring the voltage of the IGN-connection, which is shown on the Connections page; Connector number 5 Vehicle interface connection. Unit can be turned on or off with this feature, even if there is no display attached to the Disp1/2-connectors. The instructions to change settings of this feature are in *Telematics section*; using the Telematics software.

9.2 Using the peripherals

The peripheral devices start up when the computer is turned on.

The LTE-modem searches the network automatically.

9.3 Display adjustment

Display brightness is adjusted automatically, so there should not be any need to manually adjust the display. However, the amount of brightness in the dark or complete darkness varies between installations and users, so the minimum brightness level may need adjusting.

- Adjust the minimum brightness by following the instructions in *Display section.*
- Adjusting the minimum brightness only affects the minimum brightness level, which can be tested by covering the LDR sensor.

9.4 Installing the SIM card

The Cyberkar® computers have an integrated LTE-modem available as an option. To enable the modem to communicate with the local network it needs a Subscriber Identity Module Card or SIM card. The SIM card should be installed in the SIM card slot, located on the front side of the unit. An option for a second SIM card slot is available.

Note. Before installing the SIM card, disable the PIN Code query with a phone.

1. Open the front panel by pressing the locking ledge inwards from the bottom of the unit and pull the panel upwards.

Front panel
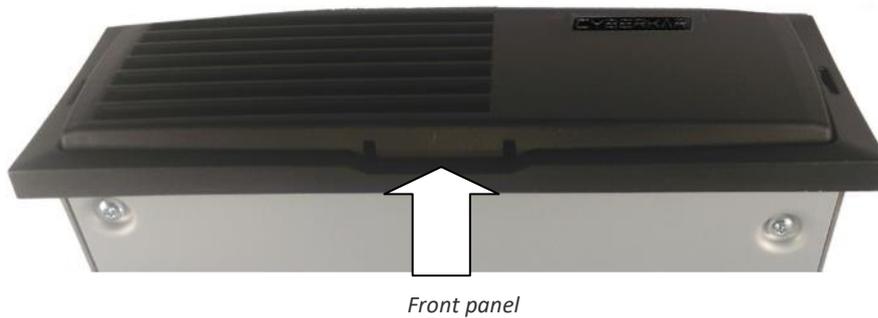
2. Push the SIM card into the SIM 1 slot, until you hear a click, which confirms that the card is now locked. The direction of the card is shown below.

SIM card set up

SIM card pushed

To remove the SIM card, press it inwards, until you hear a click and the end of the card slides out. Pull the card out.
3. Attach the front panel back into place.

19

10 MAINTENANCE

10.1 Protection and cautions

Do not scratch or press sharp objects into any parts of the devices. Do not use the touch feature of the displays with sharp objects. Do not fasten any accessories to the cover parts of the display or Central Processing Unit.

For the protection of electrical components, the covers must always be closed.

The Central Processing Unit uses air cooling to manage temperatures inside the device. Due to the cooling fans, please leave some space at the front and back of the unit.

10.2 Cleaning

The filter of the Central Processing Unit must be cleaned regularly. Dust gathered in the filter causes difficulties to cool the unit sufficiently.

1. Open the front panel by pressing the locking ledge inwards from the bottom of the unit and pull the panel upwards..
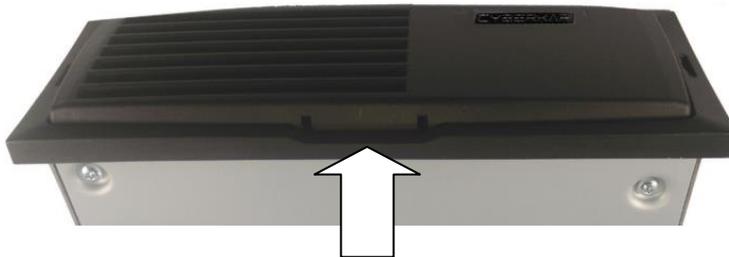
Opening of front panel

2. Remove the filter from the front panel and clean it. The filter has its own compartment inside the front panel. If the filter is extremely dirty, it should be washed in a mild detergent and dried carefully.

3. Place the filter into its compartment and attach the front panel to the unit.

Front panel and filter

Keep the devices clean and avoid contact with oil or other chemicals. Use a mild detergent mixed with water and a soft cleaning rag.

Note. Alkaline or other solvents, alcohol and other similar chemicals must not be used.

10.3 Software maintenance

Each computer has an operating system: Windows or Linux. If the computer is connected to the internet, it needs to be protected from security threats. It is important to use sufficient antivirus software and a firewall to prevent unwanted access to the computer over the internet. Windows 7 and 10 have some protection in the form of Windows Defender and Firewall.
Windows also has tools to prevent clutter that makes the system slower; Run Disk Clean-up from time to time and uninstall all unnecessary software. Do not allow unnecessary applications to start automatically with Windows startup.

Windows updates have been disabled in the preinstalled systems, to prevent unwanted telecommunication, but if possible, it would be a good idea to activate it.

With other applications, users should read the corresponding manuals for that software. In troublesome situations, contact the software provider.

11 TROUBLESHOOTING

The Central Processing Unit has an internal management system. If the system detects unwanted behaviors, it will inform the user with audible fault codes.

11.1 Fault code tones

Each fault code has a different length. Each code starts with a longer tone to mark the beginning of the code. Then a variable number of shorter tones are used to identify each code. See the table below.

Signal sonore	Cause	Suggested action
(long) + 1	GNSS-antenna not connected ‡	Check GNSS-connection (blue) and cable.
(long) + 2	GNSS-antenna shorted ‡	Check GNSS-connection (blue) and cable.
(long) + 3	GNSS fault, module not responding.‡	Check serial port settings (corresponding section) and restart the computer.
(long) + 40	LTE-modem fault, module not responding	Check serial port settings (corresponding section) and restart the computer.
(long) + 5	SIM-card has not been inserted ‡‡	Check the SIM card tray.
(long) + 6-7	Not in use	
(long) + 8	Central Processing Unit is overheating. (As a precaution it will shut down after 16 seconds)	Clean the filter and check the air intake has no obstacles.
(long) + 9	Supply voltage 9-11 V, car battery is draining. (Computer will shut down in 10 minutes) Supply voltage below 9 V, computer is using internal UPS and will shut down in 16 seconds.	Check the vehicle interface connection, measure the supply voltage and if necessary check vehicle battery and fuses.
(long) + 10	Not in use.	
(long) + 11	Display error, backlight not functioning.	Contact service.
(long) + 12	Front panel not detected. (LTE-modem is turned off.)	Check that the front panel is in place and properly attached. Reset the computer.
(long) + 13	*Telematics* connection error	Check serial port settings (corresponding section) and restart the computer.
(long) + 30 secondes continues	Critical error; Overvoltage (shut down after 16 seconds)	Check the vehicle interface connection, measure the supply voltage and if necessary, check vehicle alternator.

‡ These can be disabled. Instructions on GNSS/GPS and SIM section. ‡‡ Has been disabled as a default.

22

11.2 Other faults

If the computer does not react to the press of the power button on the display, check that the supply voltage has been properly attached, check the voltage level and make sure that the display cable is properly attached.

To remove some faults, the computer may need to be reset; If the system has completely halted or a fault constantly occurs, reset may help. The instructions for resetting the computer are on the [corresponding section](#).

Contact our service personnel, if the fault reoccurs

11.3 Serial Port Settings

In order to communicate with other internal devices, the internal management system needs a certain serial port numbering in the operating system´s settings. The default settings are listed below.

Port numbering can be checked in the device manager, which can be accessed by selecting Start, write Device Manager and press enter. The Device Manager window will appear with a list of system devices. By selecting Ports (COM & LPT), a list of serial port devices will appear. By selecting a device, a new Properties window will appear showing the details of the device. The set serial number can be changed by selecting The Port Settings tab, Advanced… button and COM Port Number.

Serial port	Device name in Device Manager	Location info in properties
COM1	Communications Port/ ‡ Pericom Serial Port Device	Back Panel (Location 3 (PTL:0000:0003))
COM3	u-blox 6 GPS Receiver/ ‡‡ USB Serial Device	Internal
COM4	‡ Sierra Wireless HSPA Modem/ ‡ Sierra Wireless WWAN Modem/ ‡ Telit Mobile High-speed Modem	Internal
COM5	Virtual GPS Device	Internal
COM6	XTRA IO USB Serial Port	XTRA I/O
COM7	Misc USB Serial Port	Internal
COM8	‡ Pericom Serial Port Device	3xCOM Cable (Location 0 (PTL:0000:0000))
COM9	‡ Pericom Serial Port Device	3xCOM Cable (Location 1 (PTL:0000:0001))
COM10	‡ Pericom Serial Port Device	3xCOM Cable (Location 2 (PTL:0000:0002))
COM11	TelematicLink USB Serial Port	Internal
COM13	CAN1 USB Serial Port	Internal
COM14	CAN2 USB Serial Port	Internal
COM15	‡ Sierra Wireless AT Command Port (UMTS)/ ‡ Telit Mobile (USB3) / ‡ Quectel USB AT Port	Internal
COM16	‡ Sierra Wireless CNS Port (UMTS)/ ‡ Telit Mobile (USB2)	Internal
COM17	‡ Sierra Wireless DM Port (UMTS) / ‡ Telit Mobile (USB1) / ‡ Quectel USB DM Port	Internal
COM18	‡ Sierra Wireless NMEA Port (UMTS) / ‡ Telit Mobile (USB4) / ‡ Quectel USB NMEA Port	Internal
COM19	‡ Telit Mobile (USB5)	Internal
COM20	‡ Telit Mobile (USB6)	Internal

‡ Option ‡‡ Win 10

11.4 Resetting the computer

Reset sets all temporary data to zero used by the internal management system and in the next start up it loads default or saved settings from the non-volatile memory. The instructions for resetting the computer are as follows:

1. If possible, shut down the system with the operating system´s shut down feature.
2. If the system is completely jammed, press the power button on the display for 30 seconds to implement force shut down.
3. When the computer is off, open the front panel and press the reset button for a few seconds with the tip of a pencil for example (Picture at *Central Processing Unit section*).
4. Restart the computer by pressing the power button on the display.

12 TELEMATICS QUICK START GUIDE

The *Telematics* application is used to control the settings of the internal management system.

The *Telematics* application can be found in the control panel.

Click start-menu and write *cont*, choose control panel.
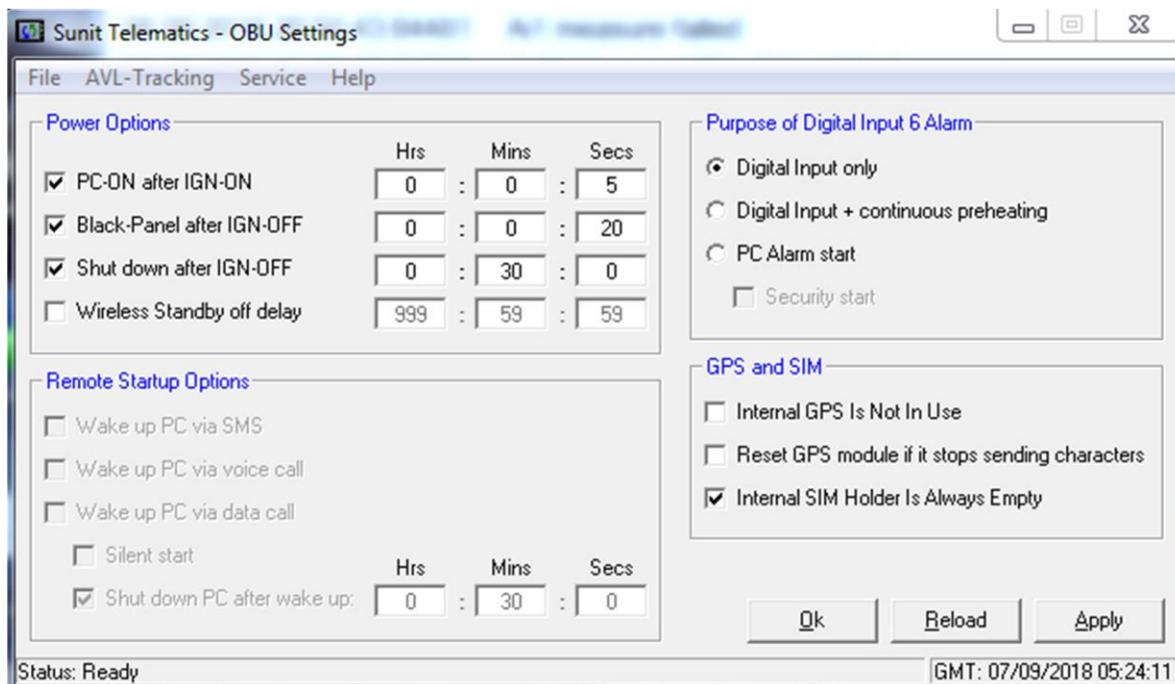
Telematics *user interface*

25

The main UI is divided into 4 different groups by their functions:

Power Options: The automatic on off features.
Remote Startup Options: Options for wireless standby mode
Purpose of Digital Input 6 Alarm: Determines how the digital input 6 connection functions.
GPS and SIM: Options for the internal GNSS-receiver and SIM card.

12.1 Power Options

Power Options

Note. These settings only work if the IGN lead on the vehicle interface cable is connected to the vehicle's ignition signal. This ignition acts as a trigger for these actions.

PC-ON after IGN-ON

Selected (default, 5s): The CPU starts automatically, when IGN is set as active and the delay time set in Hrs Mins and Secs has ended. Also, manual start up is still available for use.

Not selected: The CPU only starts by manual start up, using the power button on the display.

Black-Panel after IGN-OFF

Selected (default, 20s): The display's backlight will turn off, when IGN is set as inactive and the delay time set in Hrs Mins and Secs has ended.
Not selected: The display's backlight is not dependent on IGN states.

Shut Down after IGN-OFF

Selected (default, 30min): The CPU will implement the operating system`s shut down feature, when IGN is set as inactive and the delay time set in Hrs Mins and Secs has ended. The shut down feature of the operating system can still be used manually.
Not selected: The CPU's shut down is not dependent on IGN states, it has to be controlled manually.

Wireless Standby off delay

Selected: The CPU stays in the wireless standby state after shutdown, the wireless standby time is set in Hrs Mins and Secs.

26

Note. Wireless standby mode is always active when IGN is active and the CPU is off.
Not selected (default): The wireless standby mode is not in use.

12.2 Remote Startup Options
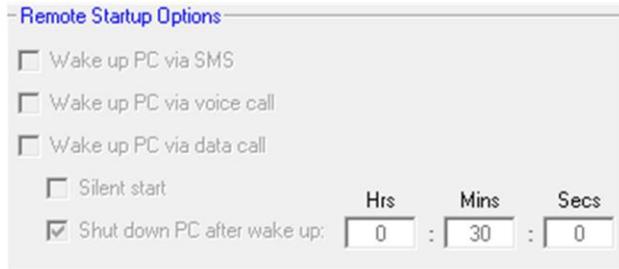
Remote Startup Options

Note. These options work only with specific modems, so they are optional.

Note. These options are available when wireless standby mode is used.

Wake up PC via SMS, voice call or data call

Selected: The CPU starts up, when it receives an SMS message, voice call or data call.

Not selected (default): The CPU cannot be started up, when it receives an SMS message, voice call or data call.

 Silent Start

Selected: The CPU starts in silent mode; There is no sound, display or indicator activity. If IGN is activated or the power button on the display is pressed, the CPU will return to its normal operating state.

Not selected (default): The CPU starts up in a normal state.

Shut down PC after wake up

Selected (default time 30 minutes): The CPU will implement the operating system shut down feature, after the delay time started by a startup SMS message, voice call or data call set in Hrs Mins and Secs has ended.

Note. This shut down will be cancelled if the power button is pressed or IGN activated.

Not selected: The CPU stays on continuously.

27

12.3 Purpose of Digital Input 6 Alarm

Purpose of Digital Input 6 Alarm

Digital Input Only

Selected (default): The digital input will act as normal grounded active digital input.

Digital Input + continuous preheating

Selected: The digital input will trigger the preheating of the CPU, if needed. (cold climates)

PC Alarm start

Selected: The CPU will perform an Alarm start: the CPU starts up automatically and records the states of all digital inputs for later use.

Security start

Selected: The CPU starts as in an Alarm start, but it is in silent mode; There is no sound, display or indicator activity and the system can not be returned to a normal state.

12.4 GNSS/GPS and SIM

GPS and SIM Options

28

Internal GPS is not in use

Selected: The audible fault codes for the Internal GNSS are deactivated. Fault code numbers 1-3.

Not selected (default): The internal receiver of the GNSS module is monitored and any faults will be reported with an audible fault code.

Reset GPS module if it stops sending characters

Selected: If the GNSS module has not sent any information in the last 4 seconds the management system will reset the module.

Not selected (default): The GNSS module will not be reset even if no information is sent in the last 4 seconds.

Internal SIM Holder Is Always Empty

Selected: The SIM card holder empty fault code is deactivated. Fault code number 5.

Not selected (default): The presence of the SIM card is monitored and any faults will be reported with an audible fault code.

12.5 Menu bar, Service

Under the Service menu, there are three functions: Unit Identification, Telematic Firmware ja Hardware Monitor. Every one of these provides relevant information about the unit.
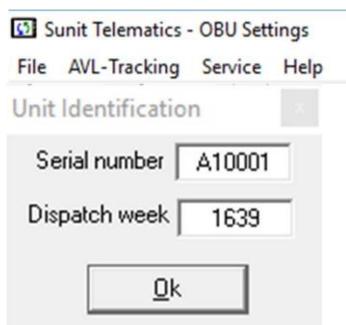

Unit Identification
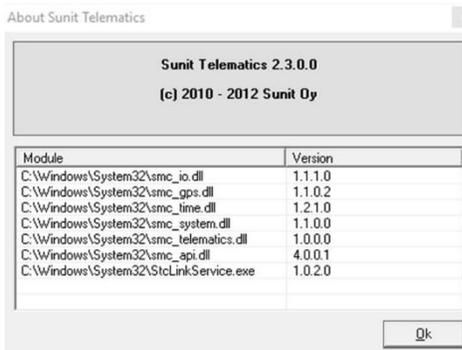
About Telematics

In the Unit Identification window, the serial number, production year and week can be found.

In Telematic Firmware/About Telematic window, all installed telematics driver versions can be found.

29
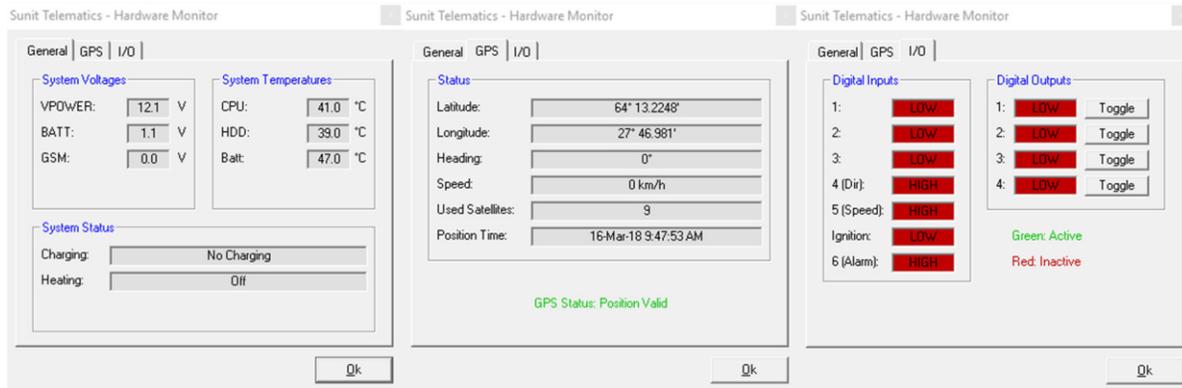
Hardware monitors

The hardware monitor window has three tabs:

- General shows measured voltages, temperatures and systems status.
- GPS shows GNSS positioning status.
- I/O shows the state of Digital Inputs and Outputs, Outputs can also be set.

13 VOLUME SETTINGS - AMPVOL

The C:\Sunit\Support\Utilities\Volume Setting folder contains the *AmpVol* application, with which the user can set the volume of the internal audio amplifiers.

Slideswitches adjusts the amount of volume; Power affects the volume of speakers attached to the lines coming from the vehicle interface connection and Disp1/2 affects the volume of the display speakers.

To have a good S/N-ratio, meaning clear sound, it is recommended that the software and operating system volumes are set high while the volume of the internal audio amplifier is set low.

On/off-switches adjusts; Off mutes, Buzzer turns off system feedback and Master mutes all.
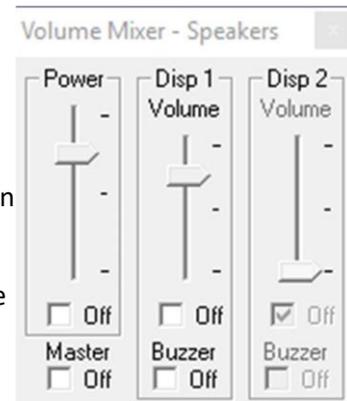

Volume Mixer Application

30

14 MODEM TOOL

C:\Sunit\Support\Utilities\ModemTool-folder contains *AmpVol* application, with which user can monitor the state of the modem.

With the application, SIM card and network status can be checked as well as the signal strength.

The folder also contains the manual for this software: "Sunit Modem Tool Manual.pdf".
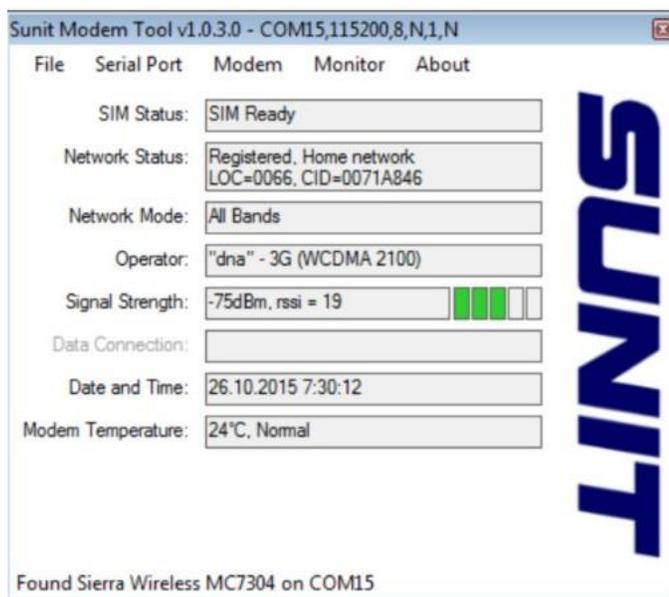

Model Tool

15 REARVIEW

C:\Sunit\Support\Utilities\RearView-folder contains RearView X.X.X.X Setup.exe application to install RearView software, with which user can monitor video streams from Video In 1-4 connections.

With the installed application, user can define a trigger, by which the video feed will automatically appear on the screen.

General idea is to use the software as a reversing camera.

The folder also contains the manual for this software; "RearView40_UserGuide.pdf".

*RearView*

31
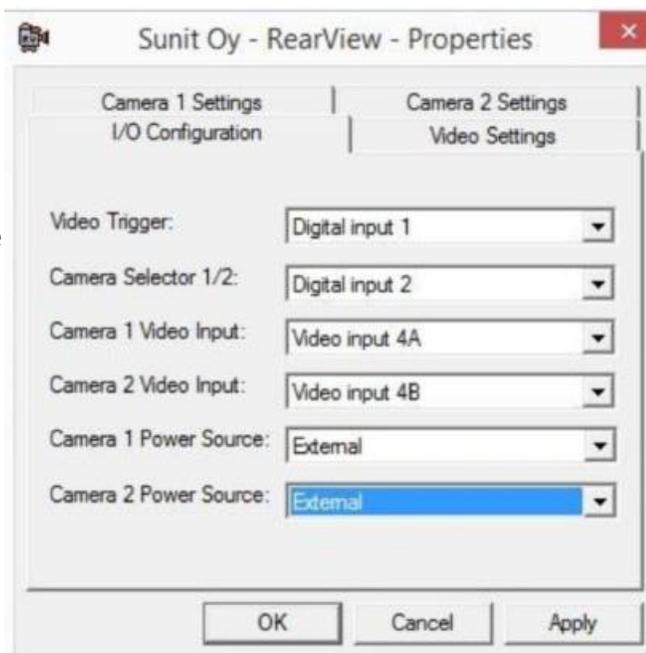
16 TOUCH SCREEN CALIBRATION

If the cursor does not follow the touched areas correctly, touchscreen calibration may be needed.

Touch Screen Calibration

1. Open the DTS Calibration application:
   - Open the Control Panel via start, write *cont* and select Control panel.
   - Start the DTS touchscreen application by double clicking it.
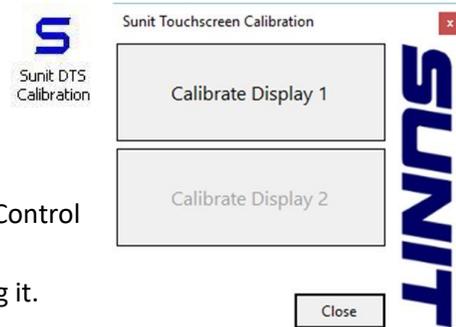
2. Calibrate the touchscreen:
   - Begin by pressing the Calibrate Display 1 button
   - As the calibration process begins, a new window covers the whole display
   - Touch the calibration cross with a finger or carefully with a blunt instrument. Repeat this with the next three crosses, which will appear one at a time.
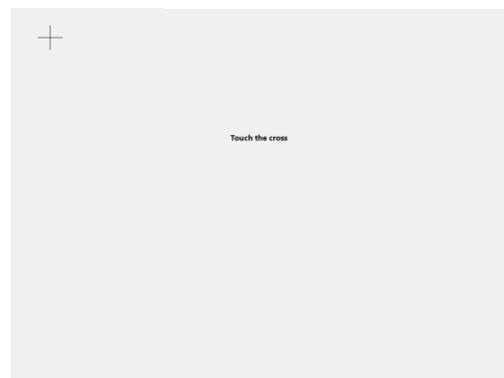

Calibration cross

3. Verify the new settings:
   - When the calibration is complete, check that the mouse cursor follows the touched spots correctly and select "OK".
   - If the calibration was inaccurate, select "Restart" to recalibrate.

Calibration Validation

If the system has a second display, it can also be calibrated by pressing "Calibrate Display 2".

When all the calibrations are completed, press "Close" to exit.
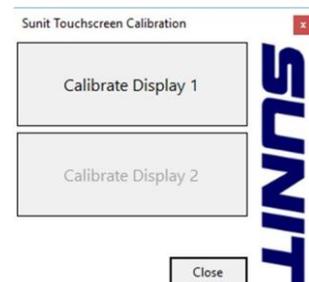
Display to calibrate selection

17 TECHNICAL ASSISTANCE

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