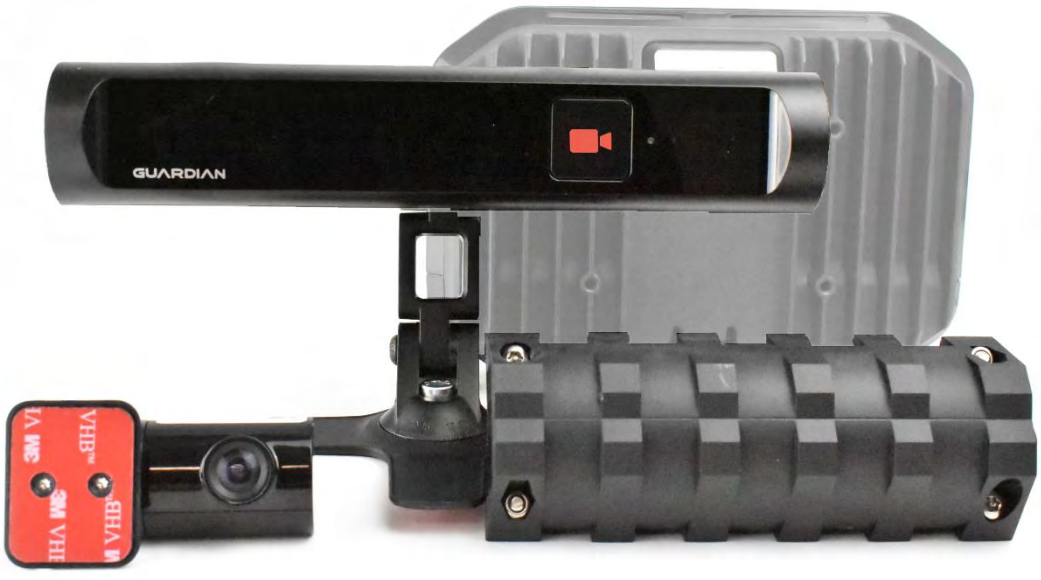
seeingmachines

GUARDIAN

FIELD SUPPORT MANUAL

Guardian - Generation 2 (Gen2)



1. PURPOSE

The purpose of this manual is to describe the process for the installation, fault finding and maintenance of Guardian - Generation 2 (Gen 2). Please refer to the Guardian Field Installation Manual (June 2016) for installations of the Guardian Gen 1.

All Guardian Gen 2 installations must be completed in accordance with this manual.

This document is the standard for Guardian Gen 2 installations.

As per product details below;

Model Name (Product Family): G2-SY-CON2

Product Name: Guardian Split System

Model Type: G2-SY-CON2-1001272, G2-SY-CON2-1001484

Product Name: Guardian System LTE

Model Type: G2-SY-CON2-1002244

Deviation from the process described in this manual may void the warranty of the product and lead to the suspension of an individual’s certification.

2. SECTIONS

SECTION	TITLE
0.	Preface and Compliance Certificates
1.	Introduction to Guardian Gen 2
2.	Installation of Guardian Gen 2
3.	Service & Maintenance of Guardian Gen 2

3. REFERENCE DOCUMENTS

The below referenced documents can be accessed via the Technical Communication Portal (TCP) at tcp.seeingmachines.com if you require access to the TCP, please make a request via the 'Apply Here' button on the TCP website.

ITEM	TITLE
1.	Knowledge Base
2.	Installation Checklist
3.	Tutorial videos

4. FCC COMPLIANCY

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. This product does not contain any user serviceable components. Any unauthorized product changes or modifications will invalidate warranty and all applicable regulatory certifications and approvals, including authority to operate this device.

FCC Part 15 Digital Emissions Compliance

We, Seeing Machines, Level 1, 11 Lonsdale St, Braddon, ACT, 2612, Australia, +61 2 6103 4700, declare under our sole responsibility that the product Guardian complies with Part 15 of the FCC Rules.

15.19

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.

15.105

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.

15.21

Any changes or modifications not expressly approved by the party responsible for compliance could void the authority to operate equipment.

This device and its antenna must not be co-located or operating in conjunction with any other antenna or transmitter.

End-users and installers must be provided with antenna installation instructions and transmitter operating conditions for satisfying RF exposure compliance.

FCC RF 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.

5. Canada Certification

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.

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.

This device and its antenna(s) must not be co-located or operating in conjunction with any other antenna or transmitter.

Cet appareil et son antenne (s) ne doivent pas être situés ou fonctionner en conjonction avec une autre antenne ou émetteur.

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.

Déclaration d'exposition aux radiations:Cet équipement est conforme aux limites

d'exposition aux rayonnements IC établies pour un environnement non contrôlé.

Cet équipement doit être installé et utilisé avec un minimum de 20 cm de distance

entre la source de rayonnement et votre corps.

seeingmachines

GUARDIAN

FIELD SUPPORT MANUAL

Section 1 – Introduction to Guardian Generation 2

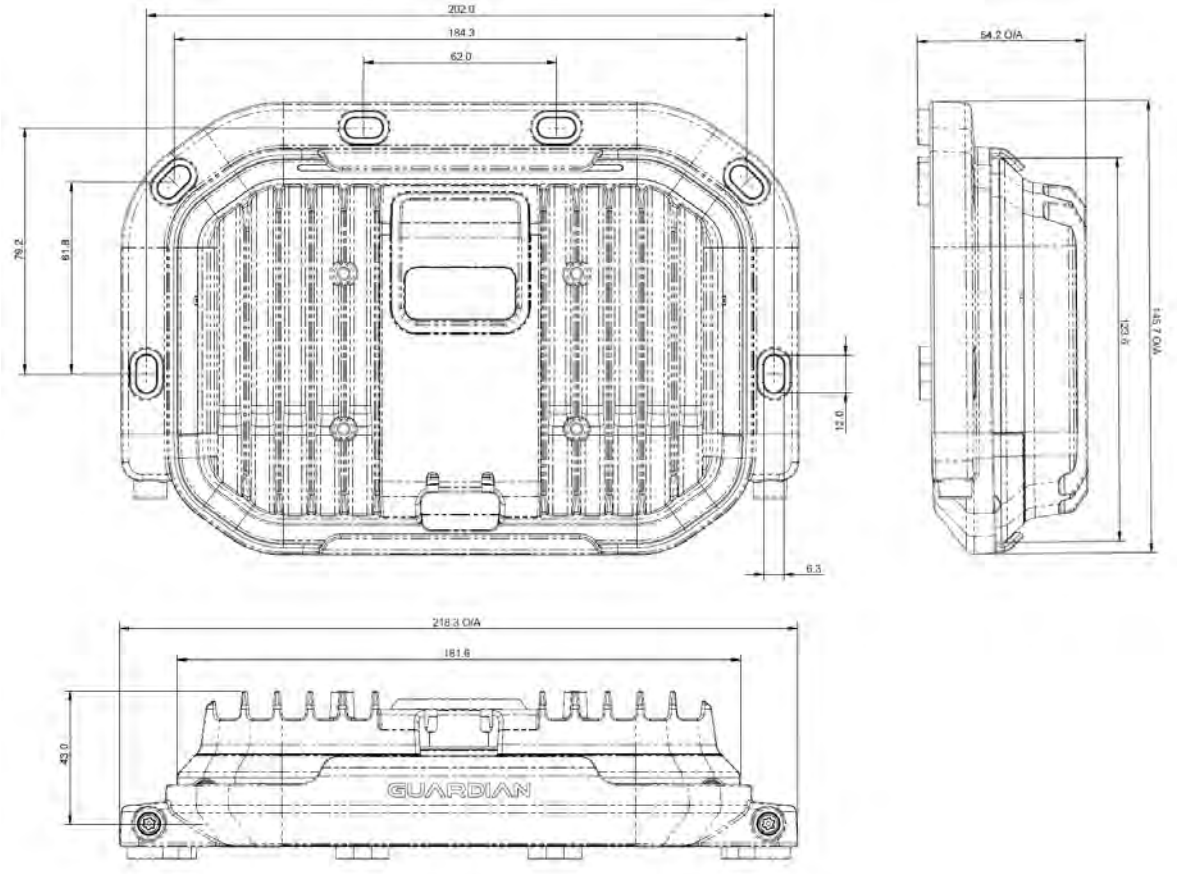


Table of Contents

1. OVERVIEW

The aim of this section is to introduce the acronyms, and components of Guardian Generation 2 (Gen 2)

Section 1 A certified Guardian Technician must read and understand this section before commencing a physical installation of the System.

2. ABBREVIATIONS

ABBREVIATION	MEANING
APN	Access Point Name-Relates to SIM Card
CELL	Cellular -Wireless communications via a communications network
DC	Direct Current
Demo	Demonstration
DSSi	Driver Safety System interface
EMC	Electromagnetic Compatibility
FFC	Forward Facing Camera
Finger Tight	Something tightened with your thumb and two fingers. With or without a tool. Excessive force may damage the item
FOV	Field Of View
GPS	Global Positioning System
HSE	Health, Safety and the Environment
ICS	In Cab Sensor (also known as the Driver Facing Camera)
IP	Ingress Protection Marking (for use with connectors) Internet Protocol (for use with computers)
ICS	In-Cab Sensor (may also be called Driver Facing Camera)
IR	Infra-Red
IVS	In-Vehicle System
JHA	Job Hazard Assessment
LAN	Local Area Network
LED	Light Emitting Diode
OJT	On Job Training
PC	Personal Computer
PCB	Printed Circuit Board
PIN	Personal Identification Number

PPE	Personal Protective Equipment (e.g. safety glasses, gloves)
PSU	Power Supply Unit
RMA	Return Materials Authorization
URL	Uniform Resource Locator -Refers to a webpage link
SD	Secure Digital -Refers to the SD memory card
SIM	Subscriber Identity Module -As in SIM Card for a communications device
SM	Seeing Machines
TCP	Technical Communications Portal
USB	Universal Serial Bus
HDMI	High-Definition Multimedia Interface -Refers to video output
Wi-Fi	Refers to a local area wireless network

MEASUREMENTS	MEANING
A	Ampere
C	Celsius
cm	Centimeter
DC	Direct Current
ft.	Feet
g	gram
GB	Gigabyte
F	Fahrenheit
in.	Inch
kg	Kilogram
lb.	Pound
m	Meter
mm	Millimeter
nm	Nanometer
oz	Ounce
RPM	Revolutions per minute
V	Volt

3. TERMS

TERM	DEFINITION
Black Box	Guardian Gen 2 has an inbuilt function to record all footage for a set period. This is known as the Black Box Recorder which is like a Flight Information Recorder - “Black Box”.
Certified Technician	A **Certified Technician** is a person who has completed the Seeing Machines training program and has been assessed in the installation and maintenance of a system in a vehicle. A Certified Technician can complete installations and conduct maintenance tasks on Guardian.
Configuration File	The configuration (config) file contains all the details required for the System to function as per the client’s requirements
FOV	A **Field of View** (FOV) event is an event where the driver has not been tracked by the Guardian System for a configurable duration of time whilst travelling at or above the configured speed limit. You may be asked to rectify FOV’s by a client or in response to a support ticket.
Isolation	The removal of all electrical energy to the vehicles, providing a safe environment for workers Isolation could be achieved by, but is not limited to: • Switching the main power supply isolation switch to the off position (where provided) • Removing the Positive wire from the battery
Non-Standard Installation	A *Non-Standard Install* may be conducted by using non-permanent measures – Velcro, cable-ties, double-sided tape or magnets. Drilling and cutting are normally not allowed during a non-standard install. May also be referred to as a ‘soft’ install.
Operator	The person in control of the vehicle. Can also be called the Driver.
Pitch	The angle in degrees, of the In-Cab Sensor (ICS) position up and down. Value range between 10 to 30 degrees. (usually mounted on the dashboard is 10 degrees)
RMA	Return Merchandise Authorization (RMA) is the SM mechanism to investigate a warranty claim.
Soft Install	See ‘Non-Standard Install’.

System	Refers to the Guardian Gen 2 System but predominately relates to the hardware.
Yaw	The angle in degrees, the In-Cab Sensor (ICS) is mounted left or right in relation to the driver's head. Value range between -25 to 25 degrees. (- equals left of the driver, + equals right of the driver)

4. SAFETY

Safety must be considered prior to installing Guardian.

You must comply with the client's site safety policies, processes, arrangements and requirements in place at the site where you will install or maintain the System.

If such policies do not exist, it is a requirement to follow the SAFE WORK practices detailed below.

For additional Safety related information, contact the local Occupational Health & Safety authority in your country.

SAFE WORK means:

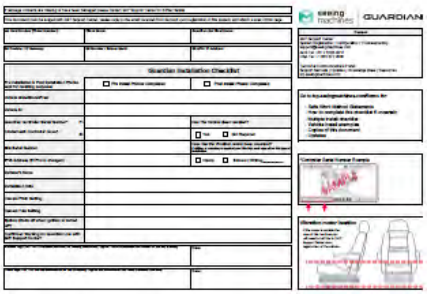
LOOK	for the hazards that may be present during the job
ASSESS	the hazards and associated risk involved with the job
MANAGE	the hazards involved with the job with controls
EVALUATE	the effectiveness of the controls

When conducting your Safe Work Analysis or a Job Hazard Analysis (JHA), you must plan for how you will manage the risks and hazards you have identified using the "Hierarchy of Controls", where **Elimination** is the most effective control measure and **Personal Protective Equipment** (PPE) is the least effective control measure:

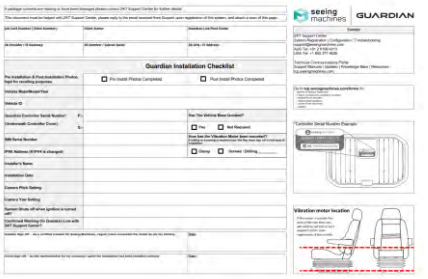
Elimination	Completely eliminate or remove the hazard from the job
Substitution	Change the task or tool to one with lower risks
Engineering	Isolation from the hazard (e.g. machine guards)
Administration	Training, policies and procedures
PPE	Use of protective equipment such as gloves, safety glasses

5. PACKAGING

System Model Type: G2-SY-CON2-1001272 and G2-SY-CON2-1001484

ITEM	QTY	DESCRIPTION	IMAGE
Box	1	**Packaging:** Brown Carton **Size:** 280x270x560mm **Weight:** 4.7kg **Markings:** seeingmachines GUARDIAN Engineered in Australia Manufactured in China	
Inner Cartons	2	**Contents:** 2 layers of shaped cardboard protecting components.	
Paperwork	1	**Documentation:** Installation Checklist	

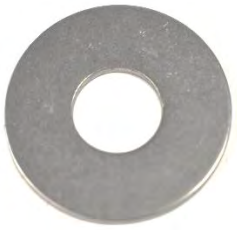
System Model Type: G2-SY-CON2-1002244

ITEM	QTY	DESCRIPTION	IMAGE
Box	1	**Packaging:** Brown Carton **Size:** 270x157x560 mm **Weight:** 3.8kg **Markings:** seeing machines | GUARDIAN Engineered in Australia. Manufactured in China. seeingmachines.com/guardian	
Inner Cartons	2	**Contents:** 1 layer of shaped cardboard protecting components.	
Paperwork	1	**Documentation:** Installation Checklist	

Note: Vibration Motor and Forward Facing Camera are packaged separately. Both come in cartons containing 10 items each. Carton size is of similar size to the system carton.

6. STANDARD COMPONENTS

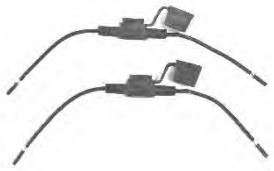
ITEM	QTY	DESCRIPTION	IMAGE
Controller Unit	1	**Controller Unit Hardware:** **Connection:** This is the main processing unit, all components connect to this unit **Size:** 182x124x43mm **Adjustment:** Input voltage: 10 to 30V DC (at the Controller) **Function:** This is the Processor of the system which runs the entire system. It is rated at IP50 and is not waterproof. The temperature rating is -40C to 65C.	
	1	**Controller Mounting Pan:** **Connection:** Holds the **Controller** to a wall or other stable fixture **Size:** 218x146x54mm (Controller inside) **Adjustment:** Comes in 2 parts, to release the controller with a T20 driver **Function:** Provides easy access to house the Controller in a universal location for quick removal	
	4	**Fastener – Custom Bolt:** **Connection:** To fasten **Mounting Pan** to the vehicle **Size:** M6x30 cap hex head 5mm with side hole **Adjustment:** Can be tightened from one side of the truck **Function:** Designed to enable one installer to tighten the bolt when two people are required	
	4	**Fastener - Nut:** **Connection:** To fasten **Mounting Pan** to the vehicle **Size:** M6 SS Hex Nut **Adjustment:** To be used with a 10mm socket **Function:** To tighten bolt	
	4	**Fastener – Split Washer:** **Connection:** To fasten **Mounting Pan** to the vehicle **Size:** M6 OD 11.8 SS Split Washer	

		Adjustment: Must be squashed flat to be tight, and to be mounted on the opposite side of the Mounting Pan **Function:** To eliminate loosening from vibration	
	4	**Fastener - Washer:** **Connection:** To fasten **Mounting Pan** to the vehicle **Size:** M6 OD 20 SS Flat Washer **Adjustment:** To be mounted on the opposite side of the Mounting Pan **Function:** Provide a wider surface area for a stronger hold	
In-Cab Sensor (ICS)	1	**In-Cab Sensor (ICS) Module Hardware:** **Connection:** To the ICS Cable **Size:** 200mm x 60mm x 38mm, cable 1.5m **Adjustment:** Must be completely visible to the drivers face in normal driving **Function:** This is the In-Cab Sensor, Audio and IR Illumination of the system that alerts and detects fatigue and distraction for the driver **Sensor viewing angle:** H47°xV36°	
	1	**ICS Cable** **Connection:** To the **ICS Module** and the **Controller Unit** **Size:** Cable 3.5m + 1.5m ICS Module **Adjustment:** N/A **Function:** To provide quick connect to the sensors for installation and replacement	
	1	**Mounting Arm Assembly:** **Connection:** Connects between the mount and the ICS module **Size:** 145mm ICS lift height **Adjustment:** Allows adjustment of 4 points using your T20 driver (Yaw, Roll, Pitch, Height) **Function:** Provides position of the **ICS** to face to driver depending on dashboard	

	2	**Fastener - Mounting Arm Assembly Bolts:** **Connection:** Connects the arm to the mount and the arm to the ICS module **Size:** M6 x 12 T20 Security Torx Head Button Screw **Adjustment:** Allows adjustment of Yaw and Roll using your T20 driver **Function:** Provides position of the **ICS** to face to driver depending on dashboard	
	1	**Screw in Hard Mount** **Connection:** Mounting plate for the **ICS** **Size:** 63mm diameter **Adjustment:** Can be orientated for mounting the screws **Function:** To be used in a Hard installation to screw the **ICS** to the dashboard	
	3	**Fastener - Self tapping screw** **Connection:** Used with the **Hard Mount** **Size:** 10 Gauge x 25mm black self-tapping screw CSK **Adjustment:** Use Phillips head to screw in **Function:** Used with Screw in hard mount	
	1	**Adhesive Soft mount:** **Connection:** Mounting plate for the **ICS** **Size:** 110mm diameter **Adjustment:** make sure position is correct before sticking to the dashboard, once down this **cannot** be reused. Alcohol wipes must be used. Seeing Machines tested the strength using 3M primer. To be covered by SM test standards 3M primer must be used. **Function:** To be used in a Soft installation to secure the **ICS** to the dashboard through adhesion	

	4	**Alcohol wipe:** **Connection:** For prepping surface before adhesion. **Size:** N/A **Adjustment:** After area is cleaned wait 1 minute for evaporation of alcohol. **Function:** For adhesive mounts to clean off dust or grease (ICS Adhesive mount, FFC mount, GPS Antenna, 3/4G Antenna)	
Forward Facing Camera (FFC)	1	**Forward Facing Camera (FFC) Hardware:** **Connection:** To the **Controller Unit** **Size:** 72 x 41 x 40 mm, cable 7m **Adjustment:** 1.5mm Allen key for pitch control (supplied by installer) **Function:** To provide footage of what the drivers sees ahead when an event is triggered **Sensor viewing angle:** H114°xV61°	
	2	**Forward Facing Camera (FFC) Tamper Cap:** **Connection:** To the **FFC adjustment screw** **Size:** 6.1mm Diameter **Adjustment:** Clips in **Function:** To provide an anti-tamper solution to the FFC	
Vibration Motor	1	**Vibration Motor Hardware:** **Connection:** To the **MFC** **Size:** 137mm x 55mm, Cables 4m + MFC 1m **Adjustment:** 2 of the 5 slots can be used when using the hose clamps for securing **Function:** Alerts the driver with Vibration when the system detects an event	
	1	**Multi-Function Cable (MFC):** **Connection:** To the **Controller Unit** **Size:** Cable 1m **Adjustment:** Plugs using clipping connectors **Function:** Provides connection for CCDC, Micro USB OTG, Vibration Motor, and other FMS integration	

	2	**Hose Clamp Hardware:** **Connection:** To the Vibration Motor / Mounting Plate **Size:** 320mm Hex Head 8mm **Adjustment:** Tightening up the hex head will give a stronger clamping connection **Function:** To clamp the vibration motor to the driver's seat without the use of screws	
	1	**Vibration Plate Hardware:** **Connection:** To the Vibration Motor **Size:** 135mm x 28mm **Adjustment:** Mounting holes are compatible with Generation 1 vibration motor holes **Function:** This mounting plate is designed to self-tap into the driver's seat if clamping is unavailable	
	2	**Fastener – Tek Screw:** **Connection:** **Size:** 30mm Hex Head 8mm **Adjustment:** Self tapping metal screws **Function:** to be used with the Vibration Plate Hardware	
3/4G Antenna	1	**3/4G Antenna Hardware:** **Connection:** To the **Controller Unit** **Size:** 145mm x 19mm, cable 4m **Adjustment:** Clean surface with Alcohol wipes before, uses adhesive VHB Tape **Function:** To provide the Controller unit ample 3/4G communication	
GPS Antenna	1	**GPS Antenna Hardware:** **Connection:** To the **Controller Unit** **Size:** 45mm x 40mm, cable 4m **Adjustment:** must face to the sky, metal **cannot** block sight to the sky **Function:** To provide the Controller unit ample GPS/GLONASS communication	
	1	**Double sided VHB tape** **Connection:** to the GPS for affixing to the vehicle **Size:** 20x33mm	

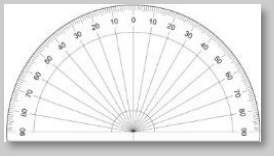
		Adjustment: Clean surface with Alcohol wipes before **Function:** To affix GPS antenna to the vehicle	
Power Cable	1	**Power Cable Hardware:** **Connection:** To the **Controller Unit** and to the **In-line Fuse Holders** **Size: 5m** **Adjustment:** Can be shortened as required **Function:** 3 core cable to provide battery, ignition and ground to the Controller Unit	
	2	**In-line Fuse Holder:** **Connection:** To the open-ended side of the Power Cable to be used with Crimps and Joiners on the Battery and Ignition wires as close to the fuse box as possible **Size:** Mini Blade Fuses **Adjustment:** N/A **Function:** Provides disconnection of electrical energy if cabling is shorted	
	2	**7.5A Fuse – Mini Blade** **Connection:** To be used with the **In-line Fuse Holders** **Size:** Mini Blade 7.5Amp **Adjustment:** Can be replaced if blown **Function:** To protect from short circuits and electrical fires	
	2	**Wire Joiner Terminal:** **Connection:** Connects a cut wire together **Size:** Blue **Adjustment:** Automotive crimps must be used to crimp terminal **Function:** For power connection	
	3	**Crimp Terminal:** **Connection:** Connects a cut wire to a threaded bolt or screw **Size:** Blue Ring 4mm **Adjustment:** Automotive crimps must be used to crimp terminal **Function:** For power connection	

	3	**Crimp Terminal:** **Connection:** Connects a cut wire to a threaded bolt or screw **Size:** Blue Ring 6.3mm **Adjustment:** Automotive crimps must be used to crimp terminal **Function:** For power connection	
	3	**Crimp Terminal:** **Connection:** Connects a cut wire to a threaded bolt or screw **Size:** Blue Ring 10mm **Adjustment:** Automotive crimps must be used to crimp terminal **Function:** For power connection	
Installer Accessories	20	**Zip/Cable Ties:** **Connection:** For cable formation, relief and safe cabling **Size: 188mm x 4.8mm** **Adjustment:** Trim excess after use **Function:** Use to keep cabling away from standard vehicles operation	
	1	**Blanking Grommet:** **Connection:** To provide quality of install if a hole in the dashboard is required for cable wiring **Size: 36.3mm (25mm hole size)** **Adjustment:** punch or cut a hole to allow cables through the centre **Function:** To cover up a 25mm drill hole in the dashboard if drilling is required	

7. INSTALLATION TOOL KIT (Provided by Trainer)

TOOL	IMAGE
Security Torx 20 (T20) Key	
24/7 Support Business Card	
USB Recovery Dongle Information Card	
USB Recovery Dongle (minimum size 4GB)	
USB to Ethernet Adapter	
Software & User Manual for USB to Ethernet Adapter **(Software not required if you are running Windows 7 and above)**	
Ethernet Cable	

8. REQUIRED TOOLS FOR INSTALLATION

TOOL		IMAGE
1.5mm Allen Key	To adjust locking screw on the FFC	
Laptop	Installation and Maintenance functions (Windows7, Windows8, Windows10 or Apple OS are preferred) Laptop must have an ethernet port or a USB port	
Protractor / Smart Phone app **(In degrees)**	Determining camera Pitch and Yaw settings	 
Box containing the following items: • (2058/S26 Ratchet Socket Bit Set 26-Piece) • 1/4in female bit ratchet Contents: Phillips bits: PH-1, PH-2, PH-3 Pozidriv bits: PZ-1, PZ-2, PZ-3 Security Torx bits: T10-security, T15, T20, T25, T30 Hexagon bits: 3, 4, 5, 6 Slotted bits: 4, 5, 6 Sockets: 6, 7, 8, 10, 13 mm 1- bit holder 1- bit ratchet 1- socket driver 1/4in square male to 1/4in hexagon male		

Ratchet spanner set 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19mm	
Vice grips	
Drill bits 2, 4, 6, 7mm	
Hole Saws 25mm (1in)	
Multi-meter and leads	
Wire cutters/Flush Cutters	
Wire strippers	

Automotive crimpers	
Torch / Head Torch	
Scissors	
Utility Knife (Confirm site requirements)	
Cordless Drill	
Cordless Impact Driver	
Brush	
Electrical Tape	

seeingmachines

GUARDIAN

FIELD SUPPORT MANUAL

Section 2 – Installation of Guardian Generation 2

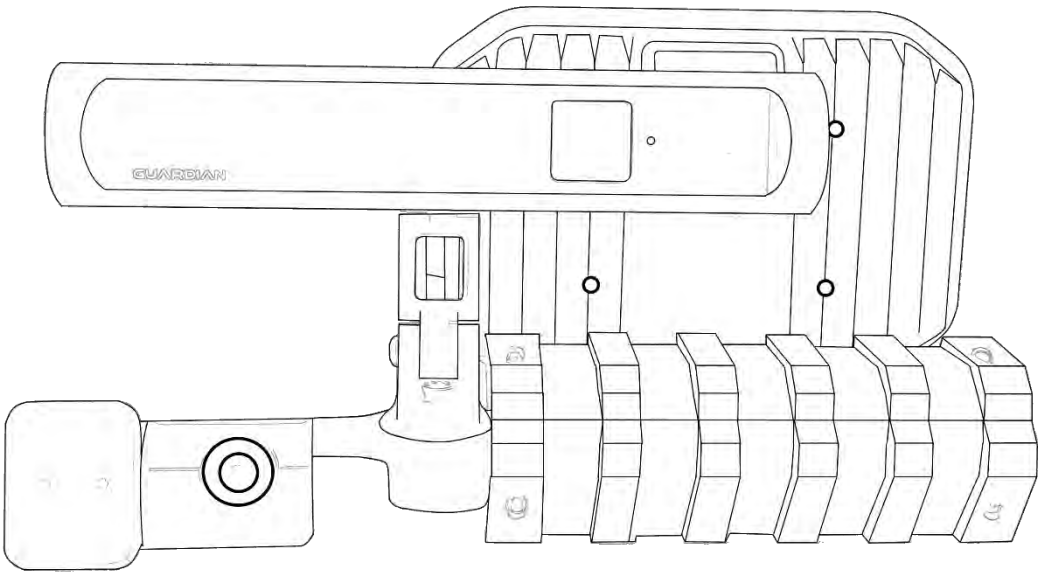


Table of Contents

1 OVERVIEW

This Section describes the process for installing the Guardian Generation 2 system (Guardian Gen 2).

This Section is to be followed in sequence, when conducting your first installation. If at the end of a particular 'Part', the material states to refer to another 'Part', do so and continue until you are referred back to the original 'Part' in the Section.

Note: A 'Part' is a titled block of information inside a Section e.g. Part 5.3 refers to title heading 5.3 of this Section. If a Section is referred to, this is referring to another section of the manual.

It is important to note that variations in vehicle cabin layout and the presence of other equipment in the cabin may mean that the preferred positioning of Guardian components as described in this section may not always be possible.

When this occurs, you need to attempt to meet the requirements as closely as is possible noting the minimum separation distances for components.

There is no specific component that must be installed prior to any other component; however, we do recommend installing cables on the Controller from left to right due to the design of the connectors.

All components of the Guardian Gen 2 system must be mounted and secured in a manner which will prevent the components from becoming a hazard should an incident or accident occur.

A Non-Standard Install may be conducted by using non-permanent measures – Velcro, cable-ties, double-sided tape or magnets. Drilling and cutting in the cabin are normally not allowed during a non-standard install. Product warranty may be void if a non-standard install is conducted.

Where Non-Standard Installs are conducted, preventative maintenance should be conducted regularly to ensure components have not shifted from the mounted location. Where components have shifted, it must be re-installed to the original position.

2 TECHNICAL COMMUNICATIONS PORTAL (TCP)

The TCP contains all information about Gen 2 including other documents and knowledge to help you install, connect and troubleshoot the system.

The TCP contains:

- Knowledge Base (KB) articles of known issues, techniques, 'how to guides' and fixes as they arise;
- Manuals for all Seeing Machines products;
- Component Datasheets;
- Multi vehicle and single vehicle installation checklists;
- Installation guides for some vehicle types;
- Connection to the SM 24/7 Support ticketing system and contact details;
- Software downloads;

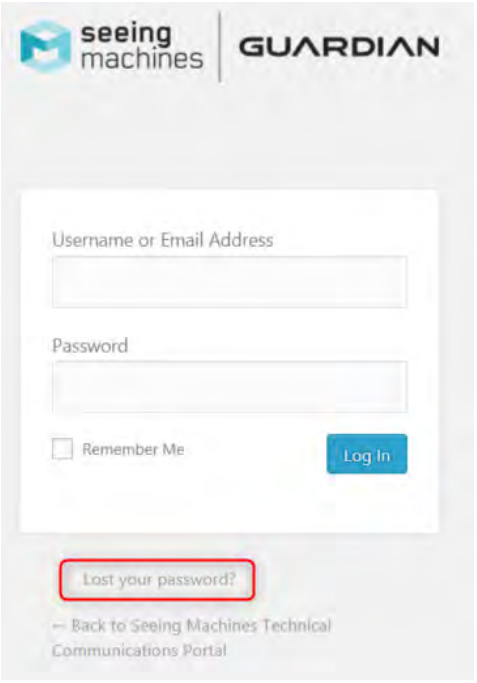
- Error Code information; and
- Online Training Courses.

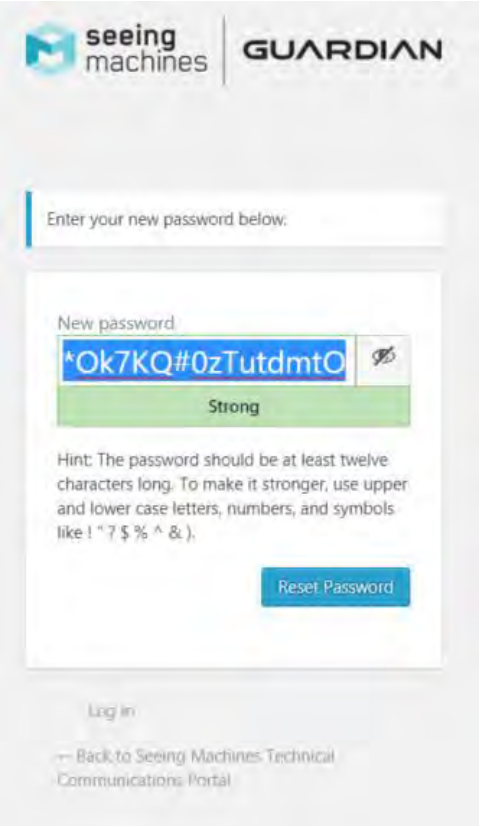
You will access the TCP to complete your online training. Once you are certified you will continue to have access to the TCP (until you are no longer a Certified Technician for SM).

The TCP holds your training certifications, and you can log in and download your certificates at any time.

The TCP can be accessed at [tcp.seeingmachines.com.](tcp.seeingmachines.com)

You can reset your password, provided you have access to your email account.

How to reset your password	
In the login screen click on “Lost your password” (at the bottom of the login page) and follow the prompts. Enter your email address and click “Get New Password”. An email will be sent to you. You should check your spam folder if the email does not come to your inbox after 5 minutes. If you cannot see an email from the SM TCP check your spam/junk folder. Open the email and click the link “Reset Your Password”.	

When the link has opened select the password and change it to your preferred password (something you easily remember) and click “Reset Password”.	

We use the information in the TCP to communicate changes and updates to the system to our Installation Certified Technicians. We recommend you keep your details up to date within the TCP.

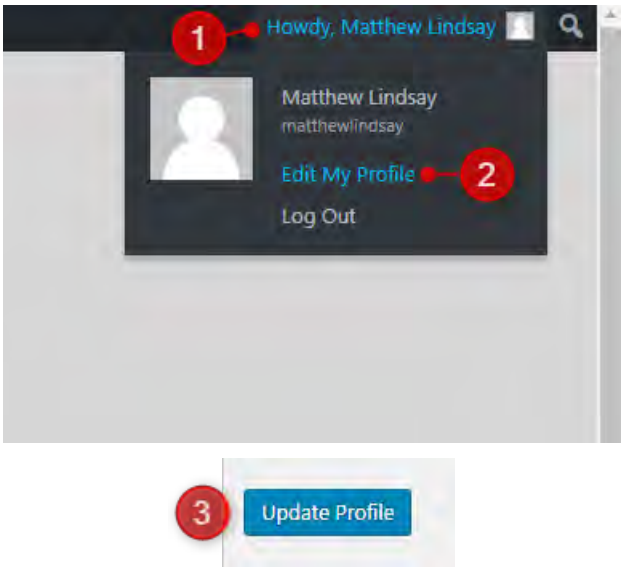
How to edit your TCP profile

After logging into the TCP, you will see your name in the top right-hand corner of the screen.

1. Hover your mouse on your name.
2. Click on “Edit My Profile”.

- Update your information as required. Once you have completed editing, scroll down to the bottom of the field.

3. Click “Update Profile” to save your changes



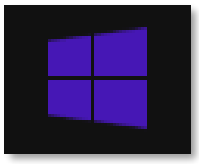
We use a program called Campaign Monitor to communicate to our Installation network regarding any changes to Guardian. Campaign Monitor allows Seeing Machines to review what actions email recipients take. We can see when recipients open emails AND if they click on any links provided within the email. We can also see if emails are not received and if recipients ask to 'unsubscribe' from emails.

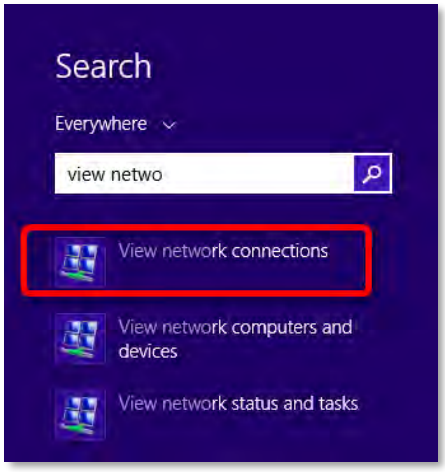
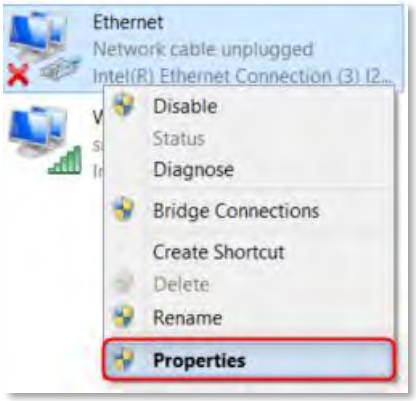
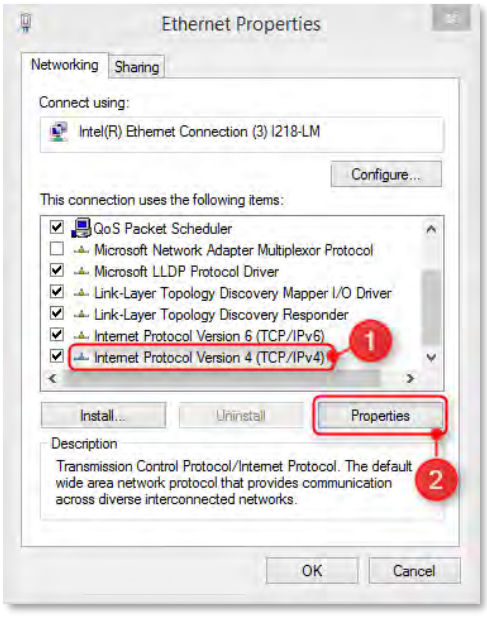
Email recipients who ask to be unsubscribed from email communications will be made 'Inactive' on the TCP. This means that they will not be able to login and access any information or training material via the TCP.

Seeing Machines Field Quality and Service Managers are responsible for reviewing Installation Certified Technicians who do not read these communications. Installation Certified Technicians are at risk of losing their certification if they continuously fail to read these communications.

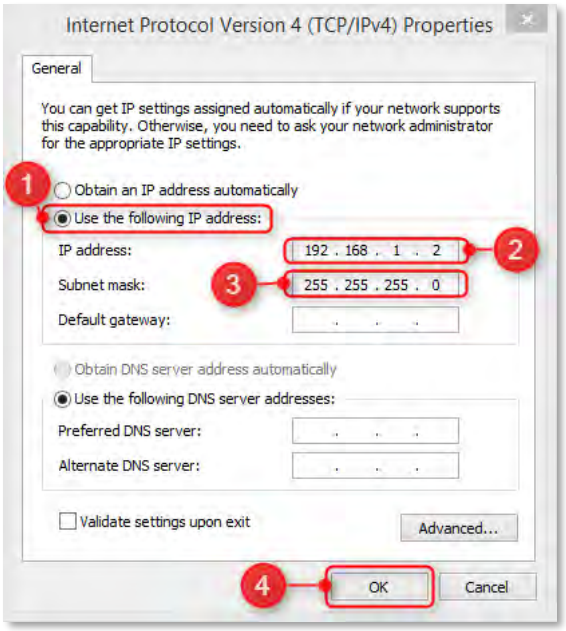
3 LAPTOP & SMART PHONE SETUP

3.1 WINDOWS SETUP

Windows Setup	(Supports Vista,7,8,10)
These instructions are for computers running the Windows 8 Operating System. These instructions will allow your laptop to communicate with the Guardian Controller Unit via the Ethernet Port. If you do not have an Ethernet Port on your computer, you will need to obtain a USB to Ethernet Adapter (not provided by SM). **Notes:** - If your computer is issued by your employer, you may require an IT Administrator to access the settings. Please ensure you have their support before starting this process. - Ensure your computers firewall and anti-virus settings allow for a connection via Ethernet. - The Controller uses your laptops Ethernet Port to communicate. When you change the settings, the laptop will only communicate with the Guardian Controller. If you use the Ethernet port for other communications, you will need to change this setting back to the original configuration to view your network or Internet.	
Click on the "Windows" Icon in the bottom left corner.	

Start typing “View Network Connections” and click on the corresponding words.	
Right click on “Ethernet” (this can also be called “Local Area Connection”) and click on “Properties”.	
1. Scroll down to “Internet Protocol Version 4” and select it. 2. Click on “Properties” once it is correctly selected.	

1. Select “Use the following IP address:”.
2. In the IP address: field type 192.168.1.2.
3. Click into the subnet mask and it will auto populate to 255.255.255.0.
4. Then click “OK” to save these settings.



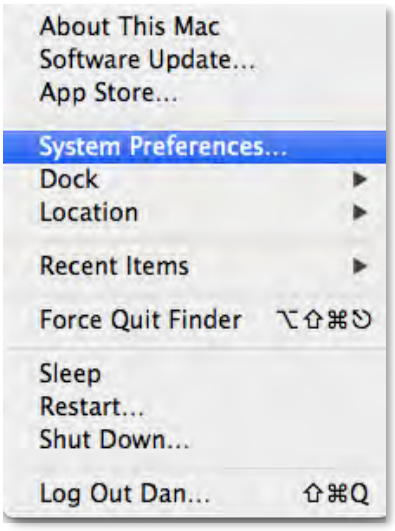
Note: When the connection is made between the Laptop and Guardian Controller Unit, the Ethernet section will show “Network [#]” where ‘#’ depends on the numbers of networks that have connected to your laptop previously.

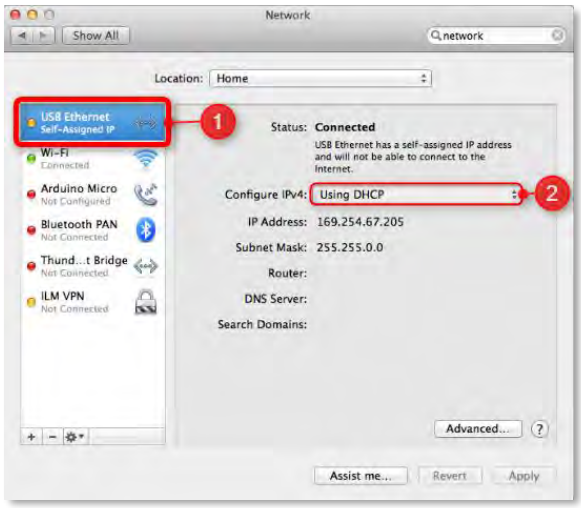
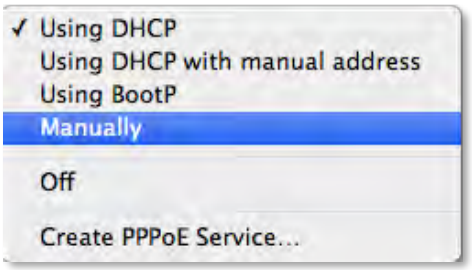
To connect to the Guardian Controller, we recommend using **Google Chrome setup** on your laptop (instructions at Part 3.3).

3.2 MAC OS SETUP

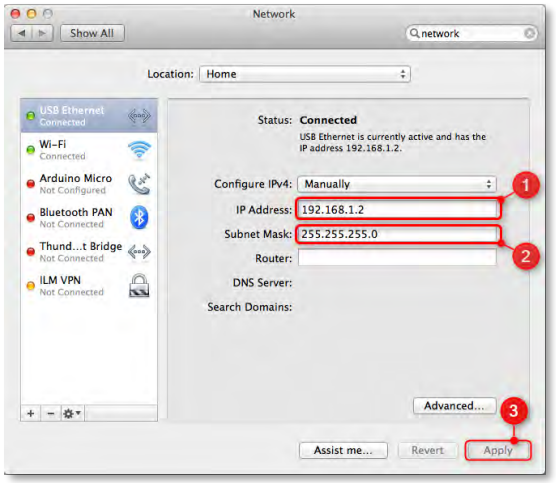
<table>
<tr><th>MAC OS (X)</th><th>(Supports OS X)</th></tr>
<tr><td colspan="2">These instructions are for Apple Mac laptops.

These instructions will allow your Apple Mac laptop to communicate with the Controller Unit through the Ethernet Port. If you do not have an Ethernet Port on your computer, you will need to obtain a USB to Ethernet Adapter (not provided by SM).

Notes:
- If your computer is issued by your employer, you may require an IT Administrator to access the settings. Please ensure you have their support before starting this process.
- The Controller uses your laptops Ethernet Port to communicate. When you change the settings, the laptop will only communicate with the Guardian Controller. If you use the Ethernet port for other communications, you will need to change this setting back to the original configuration to view your network or Internet.</td></tr>
<tr><td>Click on the “Apple” Icon in the top left corner.</td><td>  </td></tr>
<tr><td>Select “System Preferences”.</td><td> 
</td></tr>
</table>

Search or find “Network” and double click on it.	
1. Select “Ethernet” in the left-hand panel. 2. Click in the dropdown.	
Select and click “Manually” to configure the ethernet settings.	

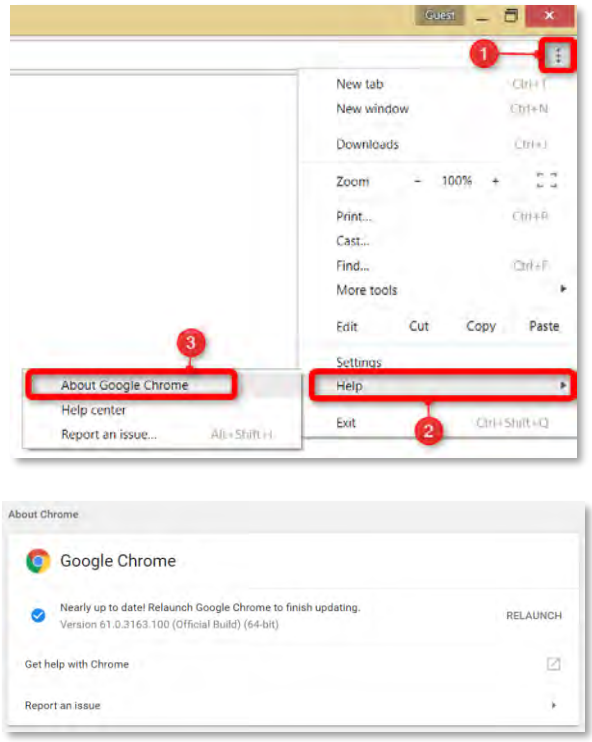
1. Enter under “IP Address:” 192.168.1.2.
2. Click into the subnet mask and it will auto populate to 255.255.255.0.
3. Click “Apply” to save the settings.



Note: When the connection is made between the Laptop and Guardian Processor Unit, the Ethernet section will show *Connected.*

To connect to the Guardian Controller, we recommend using **Google Chrome setup** on your laptop (instructions at Part 3.3).

3.3 CHROME SETUP

Google Chrome Setup	
If you do not have Google Chrome on your laptop you can download the latest version at www.google.com/chrome and follow the prompts.	
If you already have Google Chrome, you should ensure that you have the latest version downloaded. Once you have an internet connection: - Make sure you have an internet connection. - Open Google Chrome. 1. click on the 3 dots in the top right-hand corner. 2. Hover over “Help”. 3. Click on “About Google Chrome”. Chrome will then start to automatically update to the latest version.	

3.4 SMART PHONE SETUP

3.4.1 PHOTO ARCHIVE

It is your responsibility to take photos while conducting Guardian installs. This is to protect you if there are issues with the install, or the client complains of damage to the vehicle after installation. You must take photos of any existing damage prior to commencing the install. At the completion of the install, you must take photos of all the installed components.

SM will ask you for these photos if an issue develops post-installation. This could be days or weeks after the installation. Your photos will act as evidence of your correct installation.

SM recommends that you use Google Photos (it is free to use) which uploads your photos into a free cloud storage system whenever your phone connects to Wi-Fi.

Your photos will be stored by date (for easy reference) and backed up even if you change phones.

Google Photos Setup	
Google Photos is a multi-platform application. It supports both Apple and Android devices. To use Google Photos, you are required to have a Gmail address. If you do not want to create a Gmail address, you can turn your preferred email address into a "Google Account", which gives you the ability to use your preferred email address with any Google application. Sign up with your preferred (non-Gmail) email here accounts.google.com/SignUpWithoutGmail.	
Using your phone web browser go to photos.google.com and select your preferred platform to download the app.	
After installing the app, open the 'Google Photos' app from your phone.	

An opening setup screen will appear.

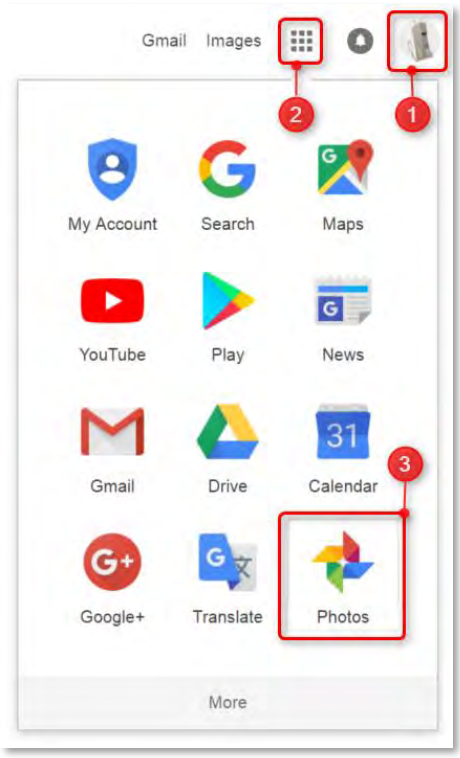
1. Make sure “Backup & Sync” is on.
2. Make sure “(free unlimited storage)” is selected.
3. Make sure your Gmail/Google Account is entered, then click “Done”.

To access Google Photos, you can use the app as normal.

Alternatively you can go to www.google.com.

1. Sign into your Gmail/Google Account
2. Click on the 9 dots to reveal your app drawer
3. Click on the “Photos” icon to display all your pictures

- If you cannot see the “Photos” icon, you may need to click on “More”



3.5 GUARDIAN SYSTEM RESTORATION REQUIREMENT

3.5.1 USB RECOVERY DONGLE RESTORATION

The TCP will have the latest software download required for Guardian to function correctly. Your USB Recovery Dongle will **NOT** be programmed when you receive it in your installer kit (which will be given to you during your training).

As a Installation Certified Technician you will receive notification of new software updates when they are available. You are responsible for creating and updating you USB Recovery Dongle when new software is released.

This section will describe how to program and use your USB Recovery Dongle for Guardian Gen 2. You will be required to perform a system recovery on every new Guardian install.

Note: You will need to be patient the first time you use the USB Recovery Dongle because it takes up to 16 minutes for the dongle to 'unpack' and 'apply' the files.

Note: Any interruption to the imaging process prior to completion will corrupt the recovery dongle. A new recovery dongle will need to be made if this occurs.

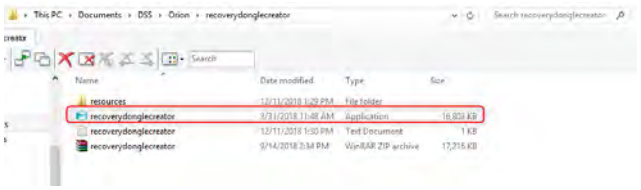
3.5.2 DOWNLOADING THE RECOVERY DONGLE SOFTWARE

Go to tcp.seeingmachines.com/recovery-dongle, select Guardian – Gen2 and download the software by clicking on "Download". Alternatively type 'recovery dongle' into the Knowledge Base.

The downloaded file will be a *.zip file.

Open the file and copy the content on to your desktop.

3.5.3 PROGRAMMING THE RECOVERY DONGLE

Programming the USB Recovery Dongle	
Navigate to the folder you extracted from the Recovery Dongle download in the previous Part 3.5.2	
Follow the instructions found in the TCP Knowledge Base, article: [Tier 1] [How To] Gen2 - Recovery Dongle Creation and Troubleshooting	https://tcp.seeingmachines.com/kb/tier-1how-to-gen2-recovery-dongle-creation-and-troubleshooting

Guardian will require a software update upon first installation of the device.

During the Installation Wizard the software will automatically ‘look’ for the latest version of software provided internet is available and connected. If there is no internet connected, Guardian will continue to search for any software updates, post-installation.

4 PREPARATION FOR INSTALLATION

This chart shows an overview of the steps required to successfully complete an installation

Pre-Installation

Call Site before arrival

- Client has Nano SIM Cards
- SIM Cards are activated
- Confirm arrival time
- Confirm opening hours
- Confirm vehicle availability

Safety Requirements

- Make sure all site safety rules are followed before commencing the installation
- Ensure you have all Personal Protection Equipment (PPE) according to site safety rules
- Ensure all site inductions are performed prior to arrival

SIM Card Collection

- Pickup SIM cards from the installation site contact
- Nano SIM cards are required
- Ensure they are activated and unlocked by the Client

Installation Requirements

- Check against the Job Card if you have been provided one, to see if there are any special installation requests including Hard or Soft Installation

Installer Kit

- Security T20 Key
- 24/7 Support Contact Card
- USB to Ethernet adapter
- Ethernet Cable
- Gen 2 Programmed USB Recovery Dongle

Customer Configuration

- Ensure you have the latest Configuration file for your site and customer settings.

Package & Contents

- Check packaging to make sure you have all required parts to complete your installation
- Check if you are installing Optional Extras as per the Job Card

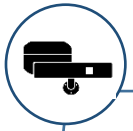
Paperwork - Checklist / Job card

- Fill in the information requested on this document before commencing the installation.

Pre-installation Photos

- For insurance reasons photos should be taken inside the vehicle before installation
- This will provide evidence for any insurance claims

During Installation



Installation of Hardware

- Complete the installation of the system into the vehicle

System Checks & Configuration

- Follow the IVS Wizard steps and confirm successful completion
- Confirm the ICS is in the correct position.

Call Support

- If you encounter any errors during the install, as prompted by the IVS Wizard,
- At the end of the installation.

Setup of Software

- Run through recovery process using a Gen2 programmed Recovery Dongle
- Connect your laptop
- Login through Chrome and run through the IVS Wizard

Photo Evidence of installation

- Take photos of each component installed for evidence of a quality install.

Post Installation

Paperwork

- Scan or photograph the paperwork for your records
- Complete Job Card and submit to SM Support

Store Photos

- Archive photos for you to recall if needed
- If you're using Google Photos (or similar) allow a Wi-Fi connection to upload the photos

5 PRODUCT INSTALLATION

The following instructions will allow you to install the Guardian Generation 2.

Some general considerations for installs are as follows:

1. You should make sure that you are comfortable with where the cables will run. It is recommended that you conduct a 'mock' cable run to ensure that there is enough slack to easily access the Controller. This is to allow for removal when conducting maintenance or troubleshooting tasks.
2. SM does not recommend removing any of the connector housings except for the FFC and ICS Fakra connections at the Controller. Removing any other housing could damage the connector/pins.

For instruction on how to remove the system and cables, see Section 3 Part 8.

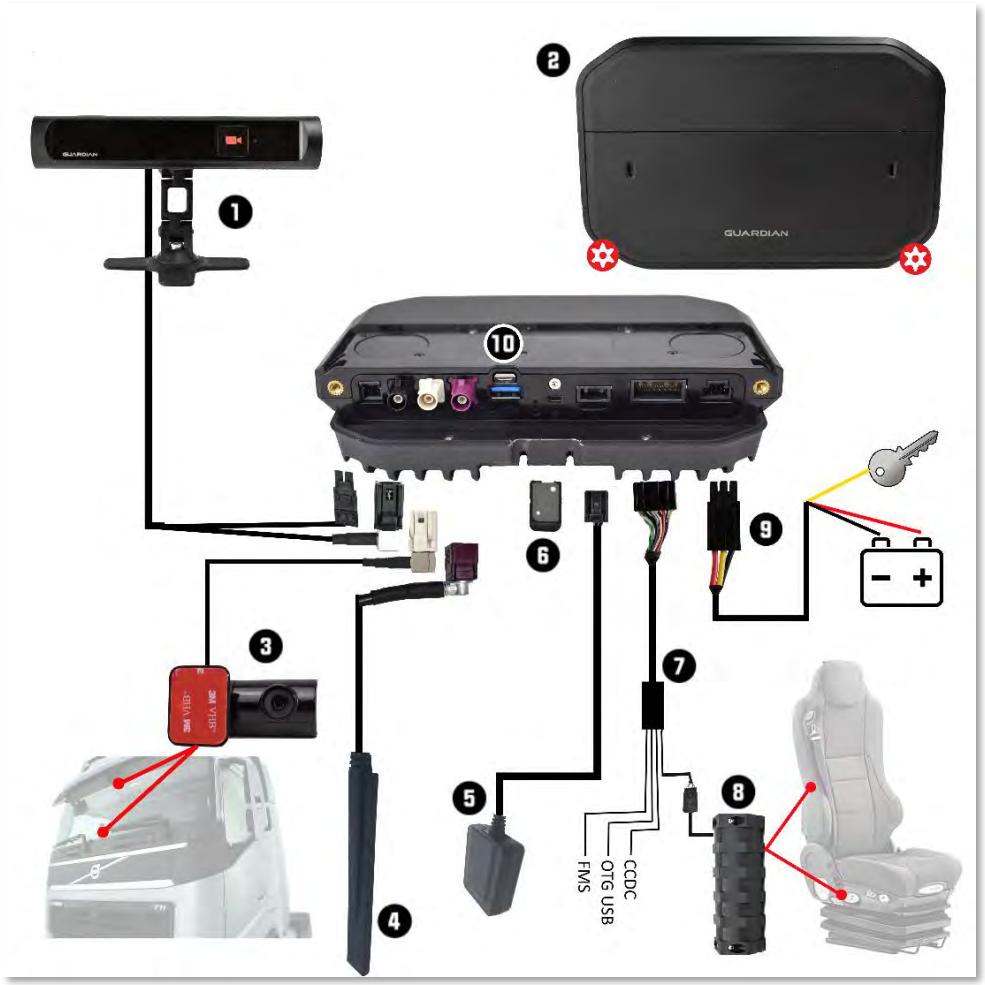
5.1 AIRBAG Safety

Prior to installing the system, you must be familiar with the location of, and deployment direction of any fitted airbags. You **must not** install any components in a way that would interfere with the operation or deployment of airbags.

To ensure that you do not place cables in the way of airbag operation, SM recommends that you run cables together with OEM cables.

You should also use a Flush Cutter when cutting excess zip ties off, as this helps to reduce damage to other components from sharp plastic edges.

5.2 COMPONENT INTERCONNECTIONS



REFERENCE	DESCRIPTION
1	In-Cab Sensor (ICS)
2	Controller Unit
3	Forward Facing Camera (FFC)
4	3/4G Antenna
5	GPS Antenna
6	Nano SIM card slot
7	Multi-Function Cable (MFC) – Connects to; • Vibration Motor • Cruise Control Disable Cable (CCDC) • Micro USB OTG –Telematics integration • Serial Telematics integration
8	Vibration Motor
9	Power Cable; • Yellow Wire = Ignition • Red Wire = Battery • Black Wire = Ground/Chassis
10	USB 3.0 – Laptop connection

5.3 INSTALLATION RECORDS

The installation checklist is to be used to record the installation of a specific Guardian system (by SN) in a specific vehicle.

This paperwork is a mandatory requirement for the installation of the system and must be retained for your own records. If there is an issue post-install, SM will contact you for your copies. If you are unable to provide these documents, you may be required to correct or remediate the issue at your own cost.

This paperwork assists SM to assure the client that the system was installed correctly.

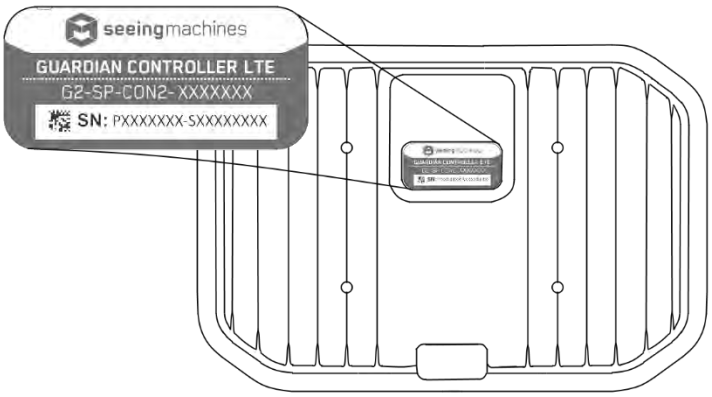
<table>
<tr><th>Installation Checklist</th><th></th></tr>
<tr><td colspan="2">Location:
The Installation checklist can be found inside the packaging of the Guardian Gen 2 system. Alternatively, it can be downloaded from the TCP at tcp.seeingmachines.com/forms.</td></tr>
<tr><td colspan="2">Information:
Each field must be filled in.
You can find a more detailed explanation of how to fill in the checklist at: https://tcp.seeingmachines.com/forms/guardian-generation-2-forms</td></tr>
<tr><td>Locating the serial numbers (SN):
The SN is located under the Controller Panel on the Gen2 Controller.
You must have your T20 driver to access this panel.
Unscrew the two bolts of the Controller Panel as per the arrows on the image to the right.</td><td>  </td></tr>
<tr><td>Slide the connector panel downwards to reveal the Product number and SN.</td><td>  </td></tr>
</table>

Record the

“P:-XXXXXXXX“ and the “S:-XXXXXXX”

Numbers on the Installation Checklist.

OR



Important Points to Note:

Prior to the installation, the Client, Installer, or the Client Account Manager will notify Support of the list of serial numbers to be installed in the Client’s fleet. This will allow the Support Centre to preauthorize the list of Guardian serials on Guardian Live prior to the installation to ensure the ability to authenticate with the server during the software install.

The authorization of a serial number can be done towards the end of the installation wizard process but note that this may take some time while the server and the unit exchange authentication credentials. Authentication during installation is not preferred.

5.4 COMPONENT INSTALLATION SPECIFICS

5.4.1 SIM CARD INSTALLATION

SIM Card Installation	
Important Points to Note: Activated SIM cards must be provided prior to commencing the install. The install cannot continue if you do not have activated SIM cards as the system will not be able to connect to a Network. Confirm with the client, that the SIM has been activated with the telecommunications provider. You will need to know the APN settings for the supplied SIM card for use during the Installation Wizard. A Global APN list is available on the TCP if needed. The customer is to be advised that the install cannot be completed if an active SIM is not provided. The SIM card size required is a **Nano SIM**.	
Mounting Location: The SIM card is to be inserted in the Controller Unit SIM card tray. You will need to pull out the tray with your fingernail. The tray completely comes out of the Controller Unit. As it is a very small part, extra care should be taken to not lose the Tray.	

Record the SIM's serial number on the Installation Checklist (1). Punch out the **Nano size** SIM (2) SM **does not** recommend using SIM Cutters to cut the SIM to the correct size.	
The Nano SIM is to be inserted so that the metal chip is visible (facing up). You must match the cut corner on the SIM card to the matching corner on the tray. Once the SIM is inserted push the tray closed. An audible click should sound when the SIM tray is in the correct position. The tray will be more difficult to close if the SIM is inserted incorrectly. Forcing the SIM Card Tray into the Controller may damage the processor. **DO NOT FORCE THE TRAY CLOSED.**	

5.4.2 CONTROLLER UNIT INSTALLATION

Controller Unit	Image
The Contoller Unit When installing the Contoller Unit you will need:	
The Mounting Pan - You should use at least 3 mounting screws. - It should be orientated so that you can easily access the 2 bottom T20 bolts to slide the controller panel off without removing the Controller Unit from the Mounting Pan.	
The Fasteners - Each fastener should be used to securely mount the unit so that it is protected against vibration.	
Mounting Location: Determine the most suitable place for mounting using the following considerations:	

Considerations for mounting are:

- Inside the cabin and away from potential water damage. The processor is rated to IP50 and is not waterproof. It cannot be mounted outside of the cabin. Water damage will void warranty.
- In a place that is well ventilated (the processor radiates heat from the heat sink). It is rated from -40C to 65C. It is recommended that it is not exposed to direct sunlight.
- In a place where it is not likely that a driver or passenger will be able to touch the heat sink (not near a passenger seat or where a passengers legs may rest during vehicle operation).
- In a place where it does not interfere with other devices.
- In a place that allows easy access for maintenance.
- Ensuring that the cables can reach the processor and other components.

Examples of appropriate locations:

- Behind the Driver's or Passengers seat.
- Under the Passengers seat.
- Inside the dashboard (if there is sufficient ventilation)
- Under the dashboard.
- On a bed/bunk wall.

Mounting the Pan:

The mounting pan is a light weight, plastic receiver designed to house the Controller Unit. The Mounting Pan allows you to site the final location of the Controller Unit without having to lock the Controller Unit in place.

You should use at least 3 of the 6 mounting holes to suit your selected mounting location. The mounting holes are designed to 'capture' a standard M6 nut and hold it in place while the screw is adjusted.

The orientation of the Mounting Pan should be aligned so that you have easy access to the T20 locking screws when you need to remove the Controller Panel and access the connection face.

The raised holes allow mounting on carpet so that the locking plate functions normally.

Note: The Mounting the Pan is **not** to be fixed to the inside top of an enclosed space, as heat generated from the controller will not be able to escape. It must be mounted on the floor or on a vertical surface.

The Fasteners can be tightened up at both the ‘head’ and ‘foot’ of the bolt.

The bolt can also be grabbed in place to hold the Mounting Pan allowing you to organise washers and nuts (see image).

Adjusting the Mounts:

The mounting pan separates into 2 parts. On the Mounting Pan, unscrew the T20 screws anti-clockwise to allow the 2 parts to separate. The two parts can be removed completely, or just loosened to allow the Controller Unit to be removed. The T20 screws are ‘captured’ which means that they won’t fall out from the locking plate when unscrewed.

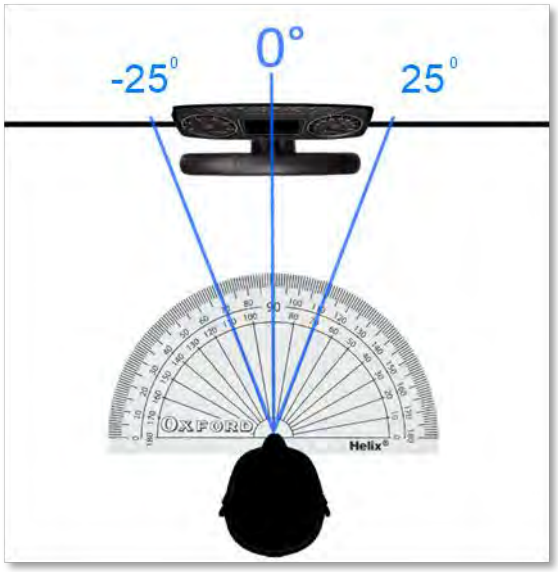
You will need to ensure that each component has sufficient cabling to reach the Mounting Pan (as the Controller will be mounted inside the Mounting Pan at the end of the hardware installation).

The 2 parts will be secured together once the Controller is inserted at the end of the install.

Important Points to Note:

You should secure the Mounting Pan first to ensure your cabling will reach the Controller once the hardware installation is complete.

5.4.3 IN-CAB SENSOR MODULE INSTALLATION

In-Cab Sensor Module (ICS)	Image
Mounting Location: The In-Cab Sensor (ICS) houses the driver facing camera and the IR Pods and is to be mounted on the dashboard within -25 to 25 degrees of the driver's straight-ahead position (see image). There is no preference to mounting the ICS to the left or the right of the driver. It is preferable to mount as close to the centre of the driver as possible. The maximum mounting distance of the ICS to the driver is 1.2m. The minimum mounting distance is 0.4m. The optimal distance is 1.0m. It is important that the ICS is mounted within these limits so that the sensors can illuminate and track both sides of the face. If the sensor is placed outside of the recommended dimensions, face tracking may not function correctly (i.e. it may not be able to see one side of the face clearly at all times).	
The ICS must be mounted so that there are no obstructions between it and the driver's face. The ICS must also be mounted so that it does not cause a blind spot for the driver. This can be completed by ensuring that you can clearly see the **entire** ICS bar when the steering wheel is at its highest point (a visual check only).	

The mounting arm provides the Installer with a degree of flexibility to allow for optimal installation. Installers need to consider the effect that vibration can have on the ICS as a result of the way the mounting arm is secured.

The KB Article on ICS Mounting Arm Positions provides more details on the preferred way to mount the ICS.

Types of Mounting:

WARNING: SM recommends using the **Hard** mount at all times. The **Soft** mount option must only be used when the client has requested that no permanent damage is to occur on the dash OR you assess that the dash material is better suited to using the soft mount. The client must acknowledge that the **soft** mount option will be used, as this comes with greater risk of the installed components becoming a projectile in the event of harsh braking or impact. On some dash surfaces, the soft mount adhesion may come lose very quickly.

Hard Mount:

The **Hard** Mount needs to be screwed or bolted into the dashboard using the supplied fasteners. The preference is to bolt rather than screw in thin plastic surfaces (bolts not provided). You must use the split washers or nylock nuts to bolt the plate on the dash. Alternatively, the self tapping screw can be used.

Confirm the final ICS position **before** bolting the hard mount in place. SM recommends that you find the most stable place possible to mount the ICS (noting that some dashboards are very flexible). The hard mount can be completely screwed down prior to affixing the mounting arm.

Soft Mount:

The **Soft** Mount uses a strong adhesive automotive grade double sided tape. The soft mount can only be used once because the tape is single use.

If the soft mount is to be used, the Client is to sign a waiver stating that they understand the risks associated with this mounting option. You need to avoid textured, soft or spongy surfaces where possible.

You must ensure that the attaching surface has been cleaned. The included Alcohol wipes are to be used to clean the surface. When using a soft mount installation, you must prepare the surface with the following primer (not supplied by SM):.

- 3M Primer 94 for dash mount.
- 3M Primer AP115 for glass mount.

Note: The primer may cause some damage to the dash if the mounting plate is removed.

Before sticking the adhesive mount down ensure that the mount is rotated in such a way to ensure the maximum amount of adhesion is achieved as seen in the image

Adjusting the Mounts:

The Sensor Mount has 4 points of movement to allow the flexiblility to achieve optimum sensor placement.

The T20 security Torx is to be used for the screws on the Sensor Mount. You can partially lock the sensor in place as finer movements can be made using the 'locking teeth'. When you have the final position, you can hard lock the ICS to the mount.

The ICS must be placed as level as possible in the final position (note – the ICS can be mounted horizontally (0°) or vertically (90° - the camera is rotated in a clockwise direction with the camera button facing down) to allow more optimal placement in-cab.

Once you have adjusted the mount, tighten the 4 locking bolts to ensure the sensor is secure and won't move with normal vehicle operation.

Do not overtighten the screws as there is a risk that the mount may fracture. The screws should be tightened 'finger' tight.

If you have to remove any parts of the bracket, ensure that the plastic teeth are aligned before tightening as the teeth may break if not correctly aligned.

The ICS is designed to be mounted at 0° or lower. 0° is considered to be directly in front of the driver's head.

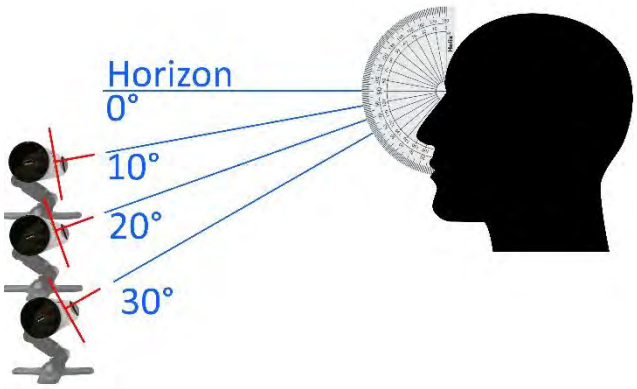
If the ICS has been mounted above the steering wheel (for example) and it has been rotated in a downward direction, it will result in a negative (-ve) value. If the ICS has been mounted below the dash and it has been rotated in an upward direction, it will result in a positive (+ve) value. The IVS Install Wizard will not auto calibrate negative (-ve) values.

Adjusting the Pitch

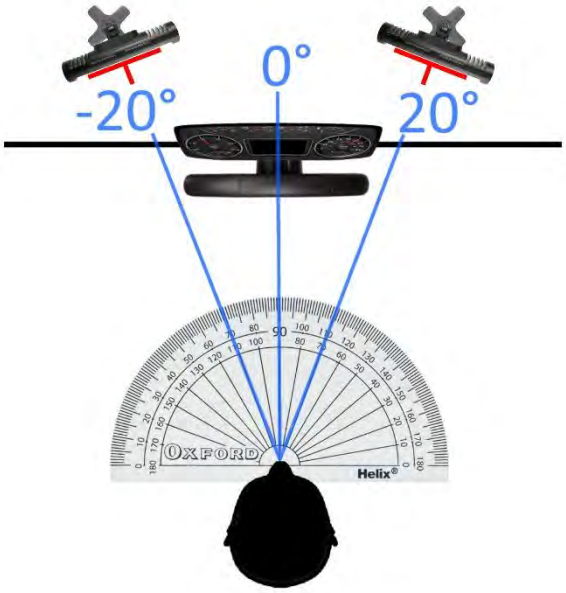
The final position of the ICS should be perpendicular to the drivers face in the normal sitting position for both Pitch and Yaw.

The Pitch should be set between 10 and 30 degrees of the drivers head position.

Adjust the angle of the ICS (vertically up and down), so that the sensor is perpendicular to the driver's head position as shown in the image.



Note: The pitch and yaw can be fully adjusted during the Software installion when you can see the video feed.

Adjusting the Yaw The Yaw should be set between -20 to 20 degrees of the drivers head position. Adjust the angle of the ICS (horizontally left and right) so that the sensor is perpendicular to the head position as shown in the image.	
Important Points to Note: Ensure the mounting plate is securely mounted to the vehicle so that it will not become a projectile in the event of harsh braking or impact. The adjustment screws should be tightened sufficiently to avoid any movement of the mount during normal vehicle operation. Do not over-tighten the screws as this could damage the mount. During the adjustment of the mounting arm it can be 'soft locked' to allow static positioning.Once in the final position it must be 'hard locked' by tightening the screws after you have completed the IVS installation wizard.	
Connecting the ICS to the controller 	The 3.5m extension cable **must** be used as it provides the only connection to the Controller Unit. Excess cable will need to be neatly positioned out of the way. Use zip ties to secure the cable. Note: The camera cable must be completely and securely inserted into the processor during installation. Failure to do so will result in the absence of LED's during the imaging process as the ICS is not detected by the Controller and cannot send the LED signals. This will make it difficult to know when the imaging process has completed.

5.4.4 FFC INSTALLATION

Forward Facing Camera (FFC)	Image

Mounting Location:

You must check the regulations of the country where the vehicle will be operating to ensure that you are complying with mounting to windscreens. Restrictions may vary from country to country.

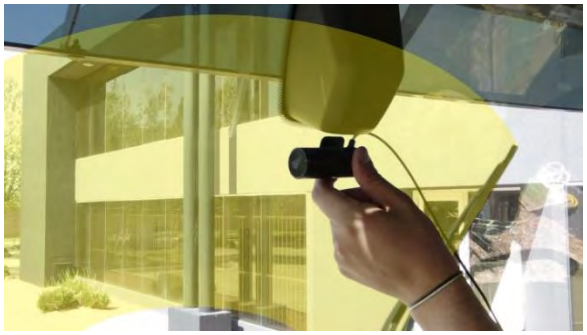
If possible, the FFC is to be mounted within the 'swept area' of the windscreen. The swept area is where the wipers clean the winscreen. This will ensure that the FFC has a clear view through the windscreen.

The preferred position is in the center of the windscreen, mounted so that it does not interfere with the driver's vision of the forward roadway.

The FFC "Guardian" logo must be able to be read correctly to ensure the footage is not captured upside down. The Guardian logo should not be upside down.

Clean the surface with the supplied alcohol wipes prior to mounting.

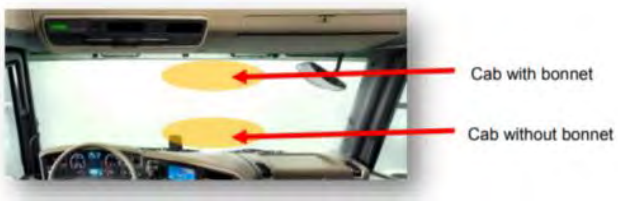
For installations in hot or humid environments, it is recommended that either Primer 94 or Primer UV (not provided by SM) is applied to the FFC mounting foot before applying the 3M tape.



Types of Mounting:

For a vehicle **with** a bonnet, the FFC should be mounted in the center **top** section of the windscreen.

For a vehicle **without** a bonnet, the FFC should be mounted in the center **bottom** section of the windscreen.



<table>
<tr>
<td>Adjusting the FFC:

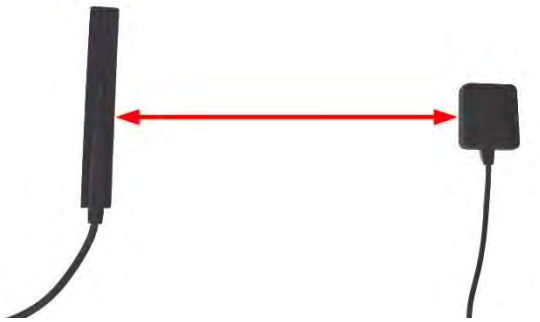
The 1.5mm Allen key is required to lock the camera in position when the optimal camera view has been achieved.

A cap is provided to clip over the lock to prevent tampering.</td>
<td> 
</td>
</tr>
<tr>
<td>It is recommended that the ‘Guardian’ symbol is level when mounted to the windscreen, as shown in the image.

Note: You can adjust the FFC more accurately when you complete the IVS Installation Wizard as the video feed will be displayed. Ensure that the field of view of the FFC shows the forward roadway.</td>
<td>  </td>
</tr>
<tr>
<td colspan="2">Important Points to Note:

Ensure that FFC is locked into position using the 1.5mm Allen key.</td>
</tr>
</table>

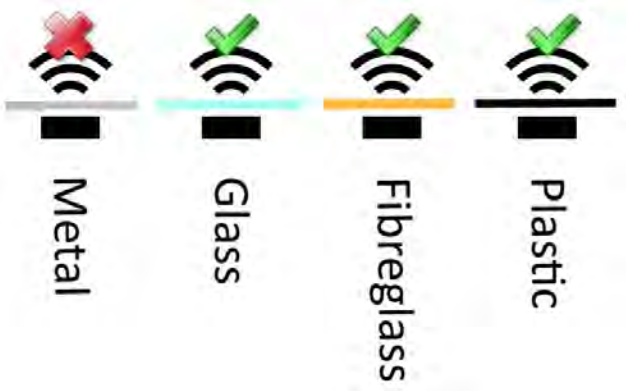
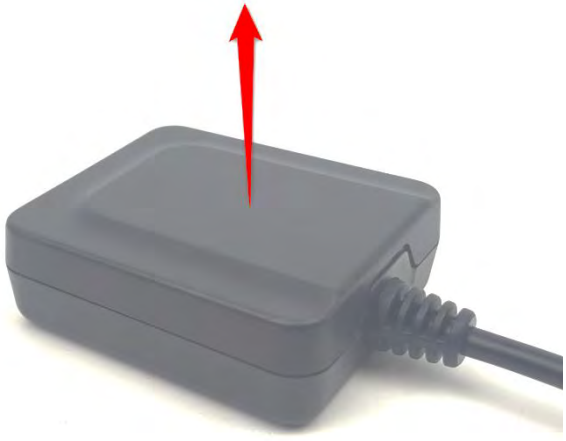
5.4.5 3/4G ANTENNA INSTALLATION

<table>
<tr><th>3/4G Antenna</th><th></th></tr>
<tr><td colspan="2">Mounting Location:
The 3/4G antenna must be mounted so that there is a clear line of sight to the sky.
The 3/4G antenna <u>can</u> transmit through plastic, wood and fiberglass.
It <u>cannot</u> transmit through metal.
It is recommended that you mount the antenna as close to a window as possible. The shape of the antenna allows you to mount it close to the windscreen.
 
</td></tr>
<tr><td>Mount the 3/4G antenna at least 30cm from the GPS Antenna.
Mount the 3/4G antenna at least 60cm from the ICS and any other antennas, such as 3rd party GPS systems and communication antennas
Mount the antenna at least 1m from the Controller.</td><td>  </td></tr>
<tr><td>Types of Mounting:
The 3/4G Antenna comes with adheisive tape for mounting.
You must clean the area with the provided alcohol wipe and allow it dry for 1 minute before mounting.
Ensure you firmly press down on the Antenna for 30 seconds.</td><td>  </td></tr>
<tr><td colspan="2">Important Points to Note:</td></tr>
</table>

Make sure you do not have to move the antenna before you affix it. Relocating the antenna after will destroy the adhesive tape and you will not be able to re-attach it.

A high gain antenna can be fitted if needed. SM recommends using an FME male to right angle Fakra D key (colour Bordeaux part number Amphenol 3FA1ENDRJ-C04-3) as the patch lead. Positioning of the High Gain antenna should be done following the guidelines of the chosen antenna.

5.4.6 GPS ANTENNA INSTALLATION

GPS Antenna	
Mounting Location: The GPS antenna must be mounted so that there is a clear line of sight to the sky. The GPS antenna <u>can</u> receive data through plastic, glass, fiberglass. It <u>cannot</u> receive through metal. It is recommended that you mount the antenna as close to a window as possible. Do not place any other devices (including other antenna's) within a 10cm radius of the GPS antenna.	
Mount the 3/4G antenna at least 30cm from the GPS Antenna. Mount the 3/4G antenna at least 60cm from the ICS and any other antennas, such as 3rd party GPS systems and communication antennas Mount the antenna at least 1m from the Controller.	
Types of Mounting: The GPS is a directional antenna and it must be mounted so that the receiver always faces the sky. The image demonstrates which surface must face the sky. There is a serial number located on the bottom of the GPS.	

There is a separate adheisive pad allows you to attach the GPS to a surface so that it can be orientated to the sky appropriately. Use caution when applying the adhesive tape to the antenna to avoid removing the Serial Number sticker. Prepare the surface using the alcohol wipes provided.	 
	 

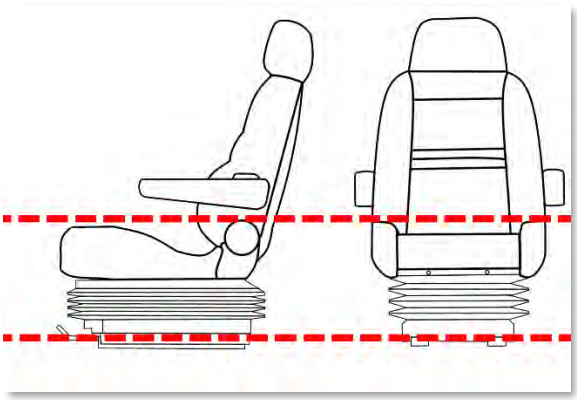
There is a magnet located internally on the bottom of the GPS. You may use this to mount the GPS without the need for tape. Note that metal blocks the clear line of site to the sky. It is not reccomended to use the magnet to affix the GPS.

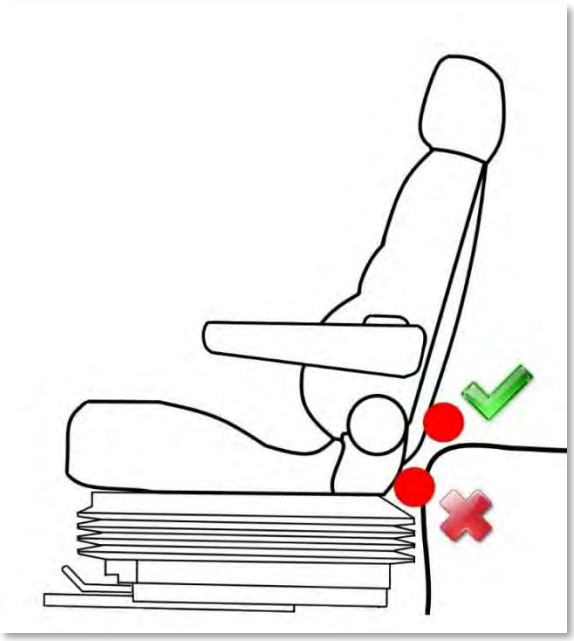
5.4.7 VIBRATION MOTOR INSTALLATION

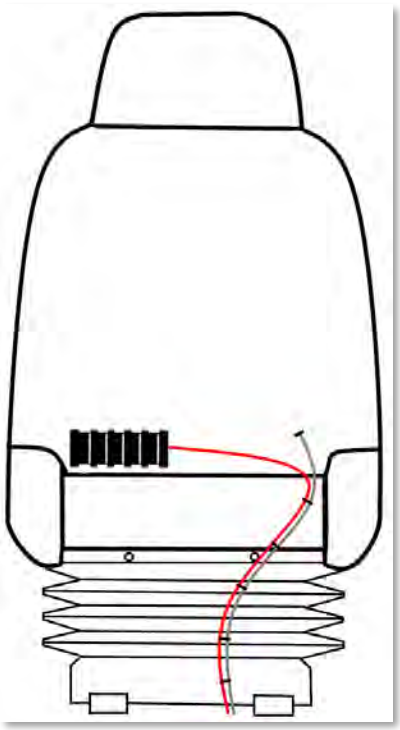
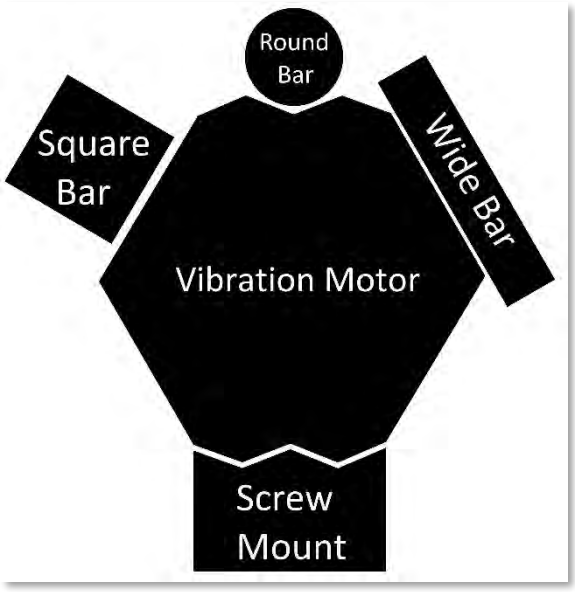
<table>
<tr><th colspan="2">Vibration Motor</th></tr>
<tr><td>Mounting Location:

The Vibration Motor must be mounted on the driver's seat. It must be located above the adjustment rails and within the red dotted lines as per the image.

Do not drill the vibration motor to the seat or frame. This may damage the structural integrity of the seat. The Motor is to be mounted using the bracket supplied.

Note: We recommend that you do not mount the Vibration Motor under the sliding adjustment rails as the vibration cannot be easily felt by the driver.</td><td>  </td></tr>
<tr><td>The placement of the Vibration Motor must not interfere with the seat belt, or seat adjustment functions. It should also not be mounted in such in way that it interferes with the driver's comfort and safety.

Note: If the Vibration Motor can only be mounted outside of the red dotted line, you must seek approval from the site representative.</td><td>  </td></tr>
<tr><td>Locate a flat, round or square bar.</td><td>  </td></tr>
</table>

You must mount the Motor to avoid the cable breaking during normal vehicle operation. Therefore, the seat must be able to move freely in all directions. The cabling must be installed with enough slack to allow this movement to occur. It is recommended you follow existing cabling if available.	
Types of Mounting:	
Bar Mount: The Vibration Motor has been designed to allow it to mount to different shapes. As per the image, you can see that there is a 'V' shape edge and a flat edge to provide you with flexible mounting options.	

The hose clamps must be used to mount the Vibration Motor to an appropriate (strong) bar on the seat. **Do not** mount the Vibration motor to any flexible bars. You can use the 2 hose clamps in any of the 5 slots on the vibration motor (as per the image)	
Vibration Motor Plate: Mounting to the bar is the preferred option; however, there is a plate that allows you to screw into a surface if required. You will need to screw 2 x Tek screws into an appropriate location (noting the 'no-go' mounting areas). **Do not** drill the Vibration Motor to the seat or the frame as this may damage the structural integrity of the seat or interfere with airbags or other electrics within the seat.	
When the Screw Mount has been fixed into position, you can fix the Vibration Motor to mount using the provided hose clamps. You will need to rotate the Vibration Motor so that the bar mount position sits on the screw mount (as per the image).	

Use the 2 hose clamps on the outer slots to secure the vibration motor to the mount.	
Adjusting the Mounts: Using an 8mm socket and your impact driver to tighten the hose clamps (this is the easiest and fastest way to mount). The hose clamps can then be rotated to the final position prior to tightening them.	
Secure any excess hose clamp with the zip ties provided.	
Important Points to Note: The hose clamps must fall into the slots on the Vibration Motor so that the motor cannot slide out. Ensure that the hose clamps are tightened so the motor cannot move or slide around during normal vehicle operation.	

The Vibration Motor cable plug connects to the MFC cable. It <u>does not</u> connect straight to the Controller.	
To reinforce the strength of the cable connector, it is recommended that you double back the wiring across the connection before securing with the provided zip ties.	
Zip tie the cable to reduce cable breakages (see image).	
Cut off excess zip tie (as per image).	

Note:

- Where possible, prevent this connection from being in the footwell as it is at risk of being damaged.
- The end of the cable has a locking mechanism. Ensure you press the locks before undoing any cables connected to the MFC.

5.4.8 POWER CABLE INSTALLATION

<table>
<tr><th colspan="2">Power Cable</th></tr>
<tr><td>Mounting Location:
Ensure that you start at the Controller/Mounting Pan (to ensure you have enough length).
Route the Power Cable to the fuse box for the power pickup.</td><td>  </td></tr>
<tr><td>You will need to route the cable in such a way that it is not at risk of being damaged during normal vehicle operation. Once you have routed the cable to the fuse box cut off any excess cable with your wire cutters.
Note: The Power Cable is the only cable that can be cut during installation.</td><td>  </td></tr>
<tr><td>At the fuse box
The fuse holders are to be attached at the end of the Power Cable, as close to the fuse box as possible. They must be attached in line with the power connection on the battery and ignition wires.
WARNING: The inline fused must be used for install. There is a risk of electrical fire if they are not used.
The provided ring terminals can be used depending on the connection type.
For information on crimping techniques refer to the “Installer Resources” on the TCP.</td><td></td></tr>
</table>

Types of Connection:

The system comes with enough crimps to enable you to crimp together the connections. This is the preferred method.

Soldering is permitted; however, you must ensure that your soldering joints are protected from shorting out by covering them with electrical tape or heat shrink.

Before power connection:

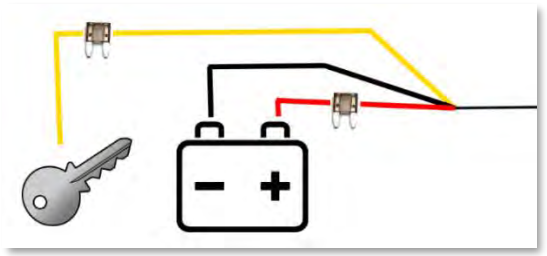
Isolate the vehicle

The wiring is as follows;

RED WIRE – Battery Terminal (7.5A fuse).

YELLOW WIRE - Ignition Terminal (7.5A fuse).

BLACK WIRE – Ground/Chassis Terminal.



You must un-isolate the vehicle to find your pickup points.

To Find a Ground Source (Black Wire):

All vehicles have a metal chassis, which is grounded. Most metal bodies around the fuse box are a good ground source; however, you must check the grounding during installation.

Ensure the ground connection is free of grease, paint, plastic, corrosion, dirt, dust and is secure.

One way to find a good ground is by switching your Multimeter to the  symbol, this is an audible alert for when the multimeter probes touch together through a contact.

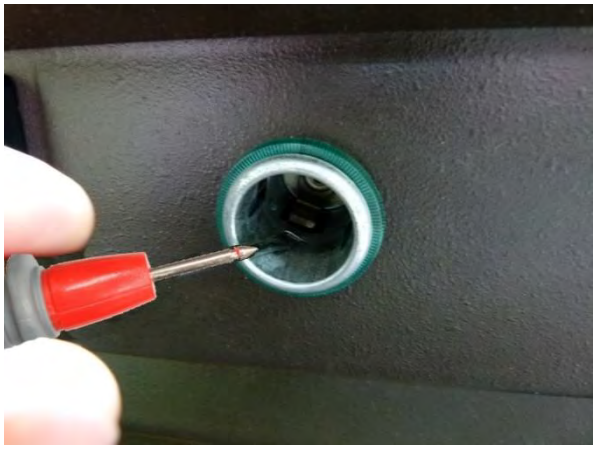
Test the audible tone by touching the probes together. Now, when you touch a known ground source to the spot you want to mount the ground wire to, you will hear an audible tone. This indicates that the site is grounded.

The tone should be a long beep until the probe is removed.

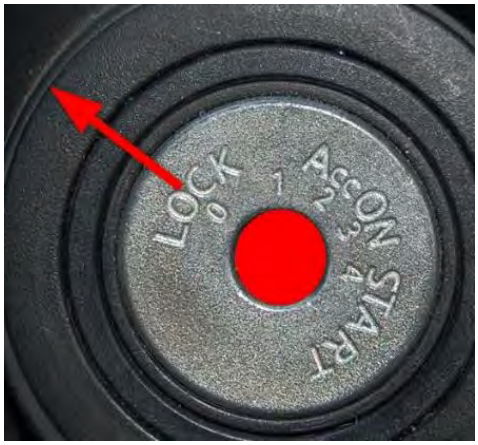
If the audio is interupted you may have a bad spot or grease, dirt, or corrosion may be in the way.

Touch one probe to known ground source like the outter ring of the cigarette light socket

Touch the other probe to your planned ground point, to ensure you have a good ground connection



Note: If the system is not grounded correctly it may appear functional but lose power or reboot when vibration occurs.

To Find Ignition (Yellow Wire): Connect the positive (+ve) probe of your multi-meter to your ignition source and the negative (-ve) probe to the ground pickup point you have identified. Switch your multi-meter to measure 'DC voltage (V)'.	
When you turn on the vehicle key to 'accessories', the ignition pickup point should display '12-24V' on your multi-meter. It should display '0V' when you turn the key to 'off' or 'lock'. If the voltage doesn't change when the key is turned to 'accessories' then the pickup point is not an ignition point. You must res-select the ignition pick-up point.	
To Find Battery (Red Wire): Connect the positive (+ve) probe of your multi-meter to your battery source and the negative (-ve) probe to the ground pickup point you have identified. Switch your multimeter to measure 'voltage (V)'. Ensure the key is in the 'off' position. With no ignition to the vehicle the battery pickup point should display '12-24V'.	

Note: If the systems LED light turns off as soon as the ignition is turned off, then the ignition and battery wires may have been installed incorrectly. You will have to swap the wires.

Incorrect power connection can result in a delay in the event data registering to the database and/or ungraceful shutdown which impacts on the system operation.

Please refer to the Knowledge Base on how to install vehicles with a 'non-essentials' switch.

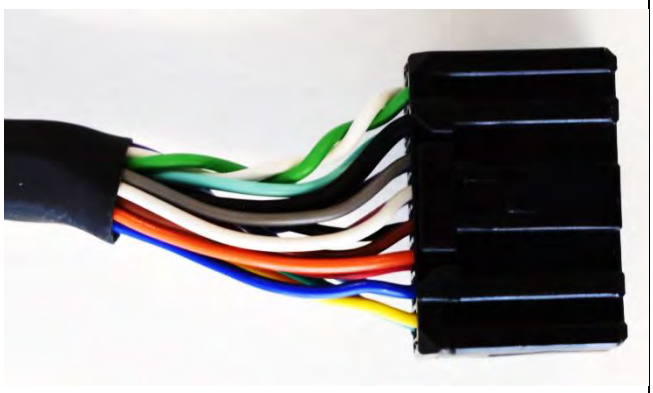
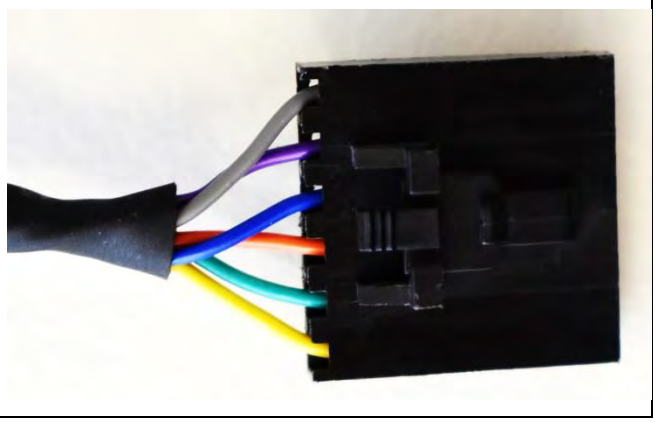
Important Points to Note:

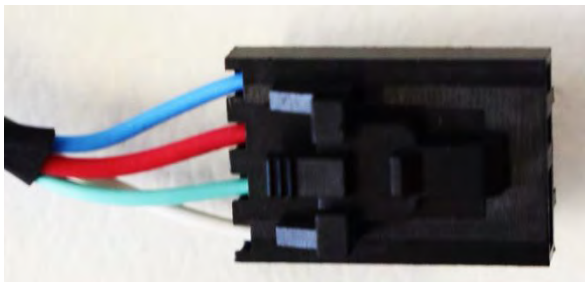
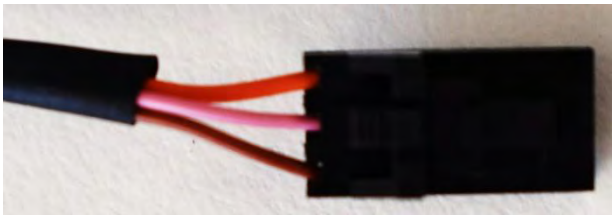
Ensure the vehicle is isolated before performing the power connection

The Guardian fuses are to be placed before any other fuses at the fuse box, or as a fuse in the fuse box, if spares are available. This ensures there is no extra load from other 3rd party devices which may blow a fuse before Guardian's fuse.

The Guardian fuses must also be wired after the Isolation/Non Essentials switch, if installed.

5.4.9 MFC INSTALLTION

Multi-Function Cable (MFC)	
Mounting Location: The MFC connects the system to: - The Vibration Motor. - The Cruise Control Disable Cable (Optional Extra See the TCP). - Mix Integration Cable - Other Fleet Management Systems (FMS) Serial and USB ports. Note that these connections are designed to work with other FMS/Telematics systems, not the FMS system in the truck. The MFC will be plugged into the Controller.	
Types of Connection: The MFC cable splits from one connector to four.	
The Main connector plugs into the Controller (see image).	
The six pin connector plugs into the Vibration Motor cable.	

The four pin connector plugs into Third Party Fleet Management Systems (FMS) Products (Optional extra) including the Mix Integration Cable.	
The female micro USB connector plugs into Third Party FMS Products (Optional extra) or any other USB. It cannot be used to connect to a standard USB.	
The three pin connector plugs into the Cruise Control Disable Cable (CCDC) (Optional extra).	
Adjusting the Mounts: Zip tie the MFC cable to existing cable looms to reduce damage if the cable is pulled.	 

5.4.10 CABLING INSTALLATION

Installation of Cabling	
Mounting Location: When installing the cabling, ensure you have enough length, with slack, to reach the Controller.	
Placement of cables: After all components have been installed and the cable routed correctly, the cables returning to the Controller should be fixed for easy access when the Controller is removed from the Mounting Pan.	
Cable relief: After all cables have been plugged into the Controller, the cable relief management system must be used. This will minimise pull on the cables and allow easy removal of the Controller Cover.	

There are 2 slots cut into the Controllers case for cable relief. You must push a zip tie into the slot (as shown in the image).

You must then secure the cables using the zip tie (as shown).

You must complete the Software installation before closing the Controller Cover and locking it into the Mounting Pan.

With sufficient cable slack, the Controller can be kept close during the Software Installation.

Go to Part 6 for Software Setup

6 SOFTWARE SETUP, TESTING & ACTIVATION

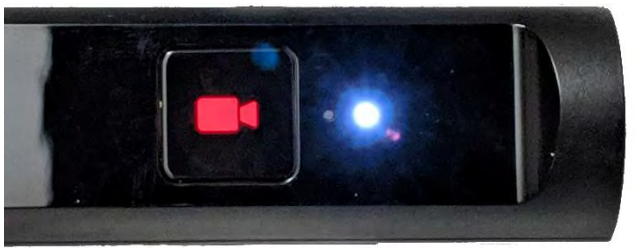
The system will **not** be delivered with default software. If any software is delivered with the system, there is a very good chance that it is not the most recent version of the software. You **will always** be required to apply the most recent version of the software using a programmed USB Recovery Dongle.

Additionally, the system software must always be adjusted to accommodate the vehicle setup and the Clients' specifications.

This section provides you with the steps required to complete the Software Installation.

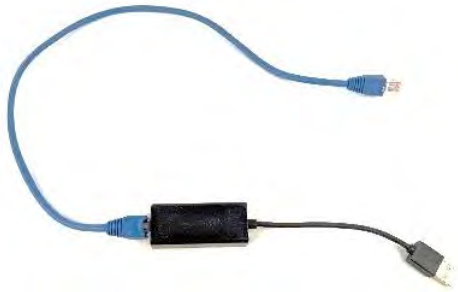
6.1 APPLYING LATEST SOFTWARE TO THE CONTROLLER

Software Installation	
The Software (SW) Installation is to be conducted once you have completed installing all the Hardware components. As the system needs to be configured, all components (except for the processor) need to be in their final location. You will upload the SW using a USB Recovery Dongle (refer to Section 3.5). The latest version of the SW will be available via the TCP in the Knowledge Base. Certified Installers can navigate to Guardian Generation 2 > Gen 2 Downloads/Forms where the Recovery Dongle Creator and SW release notes will be found.	
Un-isolate the vehicle and ensure the ignition is 'off'.	
Insert the USB Recovery Dongle into the USB port on the Controller.	
Turn the ignition to 'On'. The Controller will now power up and commence applying the SW.	

During the re-imaging process the status light on the face of the ICS will **flash bright white** (with blue tint). When the process has completed the status light will then transition to a **steady bright green** indicating it has completed successfully. If the re-imaging has failed, the face of the ICS will flash **bright red** with a repeated 'chirp' sound (no image for this status).	 
When the system has stopped flashing, remove the USB Recovery Dongle. **Do not** pull the power as this may cause corruption to the Software and a reimage may be required. **Any interruption to the imaging process prior to completion will corrupt the recovery dongle. A new recovery dongle will need to be made if this occurs.**	
The Controller will automatically restart. During bootup an **Amber light** will be visible for 90 secs. The processor will present the Installation Wizard shortly after the Amber light is turned off.	

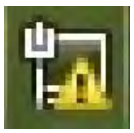
6.2 INSTALLATION WIZARD

Installation Wizard
The Installation Wizard will always start after you have: - Used the USB Recovery Dongle for the first time. - Used the USB Recovery Dongle to reset the system (re-flashing the system). - Performed a Factory Reset. You must have your Laptop setup to communicate to the Controller unit (refer to Section 3).

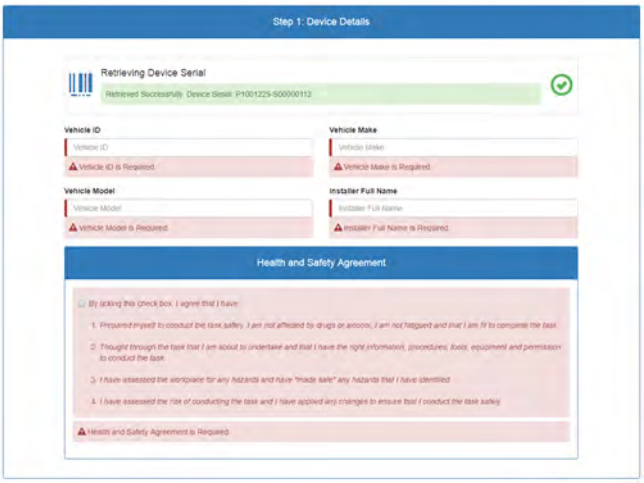
Identify the Ethernet cable and the USB to Ethernet adaptor from your Installer Kit (not provided in the system box).	 
Plug them both together to create your access cable.	
Plug the Ethernet cable into your Laptop Ethernet Port.	
Plug the USB adaptor plug into the Guardian Controller.	
Before starting the IVS Installation Wizard ensure: - All peripherals are plugged in to the controller. - The 'active' SIM is inserted and you know the APN details for the telecommunications provider. - You have the Client specific configuration file on your desktop ready to install (this is obtained from SM 24/7 Support).	
Open Google Chrome and type: 192.168.1.1	

Note: If the connection fails, check the icon in your System Tray (in the bottom right) and wait until the 'Unidentified Network' symbol appears. This will mean that the Controller is ready to connect.

Try the previous step again.



This setup assumes a standard installation using a SIM card with a USA based provider 'AT&T' used as the example provider.



The Installation Wizard will run through all the steps required to complete the SW installation for the first time (or on system reset).

The Wizard is simple to use, requiring you to complete mandatory steps before allowing you to progress to the next step. You may progress back to previous steps by clicking on the 'Previous' button, selecting the reset button (where available), or by going to the Icon buttons on the top of the page.

If at any stage, the Wizard does not allow you to progress, then you must call SM 24/7 Support for assistance. There will be 'Information' buttons to allow you to communicate effectively with the 24/7 Support Technician.

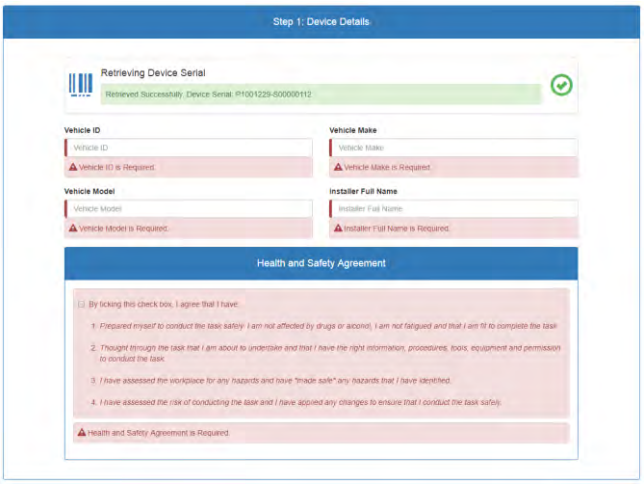
If this occurs download the service logs to provide to Support throughout the Wizard. The "Download" button can be found at the bottom of the Wizard pages.

Step 1 – Device Details

Verify the device serial number matches the sticker on the controller. If the SN is presented does not match, or X's are presented, please call 24/7 Support for assistance.

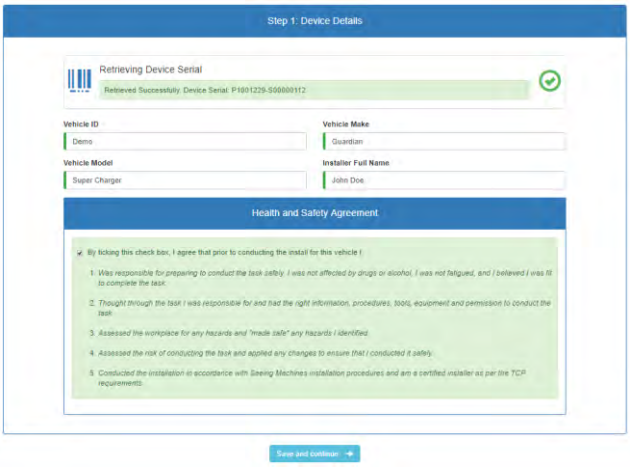
Using the Installation Checklist, you completed during the HW installation complete the following information:

1. Vehicle ID
2. Vehicle Make
3. Vehicle Model
4. Installer Full Name (must align with TCP profile).



Tick the Health and Safety Agreement, which confirms that you have conducted a Health and Safety Check prior to commencing the installation. You will not be able to continue until you have accepted this agreement.

Click 'Continue' to move to Step 2.



Step 2 – Config and eJSON Upload

During this step, you will load the Client's configuration file and the eJSON file (both you will have received in the SW package prior to arriving at site). This is the required method for all new installations.

- If you do not have the client specific configuration file, choose to use the default configuration file by selecting "**No**".
- If you do not have the eJSON file, you will not be able to complete this step, Call SM Support to have this file sent to you

To load the client configuration file, click "**Yes**". You will then be required to upload the Custom Configuration file.

2.2 - Using the 'Browse' function, locate the Configuration File on your laptop (you should have placed this on your Desktop prior to commencing the Installation). The configuration file will be named ivsconfig.xml. **Note: the configuration file will be an *.xml* file.**

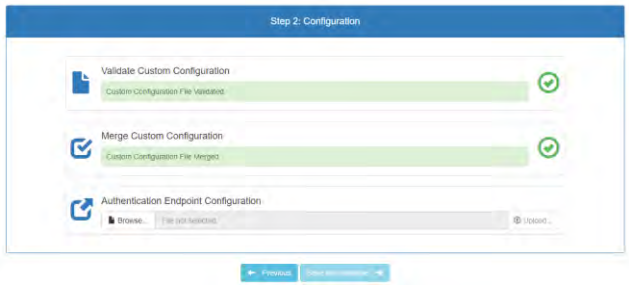
Once you have located the file, click on the 'upload' button.

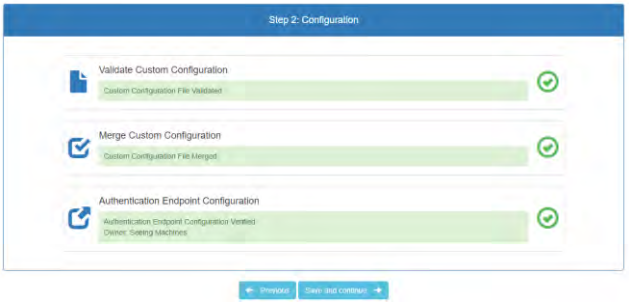
2.3 - When the configuration upload has finished, you will see a green tick and a statement that says, 'Custom Configuration Updated'.

2.4 – Load the eJSON file under

'Authentication Endpoint Configuration'. Select 'Browse' and locate the eJSON file on your laptop. Note: the file will end with '.**ejson**'.

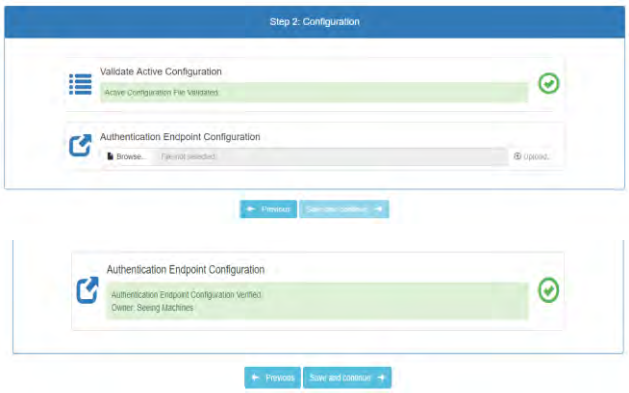
Load Configuration File:





Default Configuration and eJSON File:

Click ‘Continue’.



Step 3 – Network Connection

This step allows you to enter the information for the SIM card to allow the processor to communicate with a cellular Network.

The system will automatically Detect the SIM card (1) and will present a green tick when it is successful.

Note: If the detection is not successful, a red “X” will appear with an error stating the SIM is missing. Remove the SIM card tray, check that the SIM is not damaged and inserted correctly, then reboot the system by cycling the power. Once the system boots back up (approx. 90 secs) select the “Detect SIM” button to clear the error.

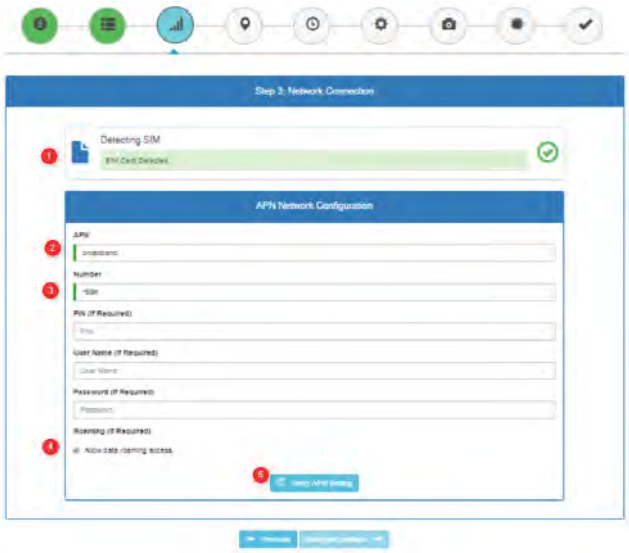
Referring to your Installation Checklist, enter the APN and Number details (2&3) for the SIM card. These numbers must be correct. If not, the system will not connect to the network. *If the numbers are not provided, the PIN, Username and Password must be left blank.*

Note: Do not use a SIM that is not the permanent SIM for the system as the configuration file will not recognise it.

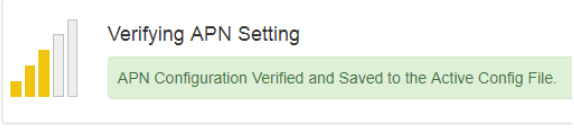
Select ‘Roaming’ data (4) if the client’s cellular plan allows for this feature and the vehicle is operating in a location where connection may be limited between regions.

Select Verify APN (5) Setting to apply the entered settings and gain network connection.

Once the APN has been verified, the Verifying APN Box will appear green, with a green tick, and the statement ‘APN Configuration verified and saved to Active Config’ will appear. If the APN is not able to be verified, you will need to confirm the APN



SIM Detection Issue:



Information window:

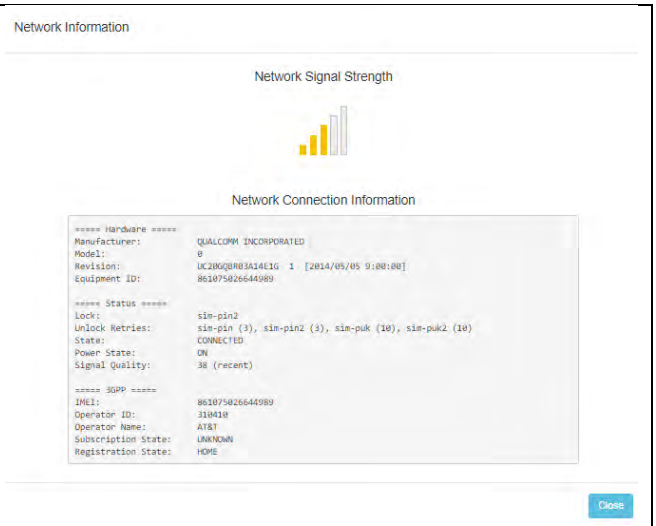
settings or call 24/7 Support. Use the Information button when talking to the Support Technician.

Note: The bars represent the signal strength of the SIM card. The bars represent the following:

1. Red, one signal bar – 0 to 10%
2. Red, two signal bars – 11 to 20%
3. Yellow, three signal bars – 21 to 50%
4. Green, four signal bars – 51 to 75%
5. Green, five signal bars – 76 to 100%

Click 'Continue'

You will be able to continue the IVS Wizard even if you do not have internet connectivity; however, you will receive a warning. In your progress bar, this step will remain yellow. **It is the responsibility of the installer to ensure an active SIM is used and the credentials are entered correctly.**



Step 4 – GPS Location

This step verifies that the GPS is working.

When the GPS device is found (this may take two minutes the first time), the 'Checking for GPS Connection' box will turn green and a tick will appear.

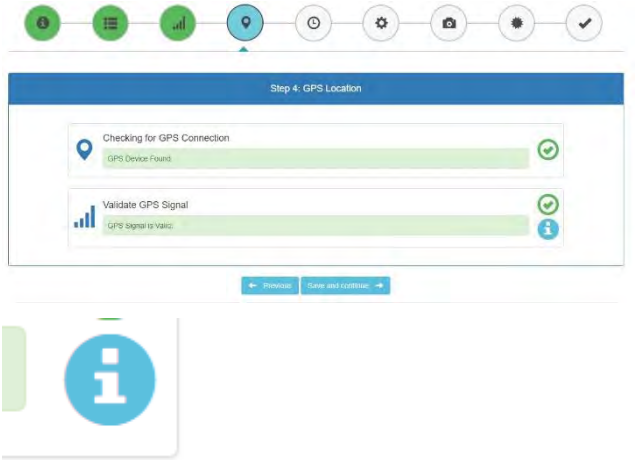
Click 'Continue'.

If the GPS cannot be found, the box will turn red and a cross will appear. Confirm the GPS is connected and call 24/7 Support if the issue persists.

If the GPS is detected but has no signal you will be able to move onto the next step but will receive a warning flag (yellow balloon) indicating there is a minor issue.

You may need to move the vehicle outside to get good GPS signal.

Click "Continue".



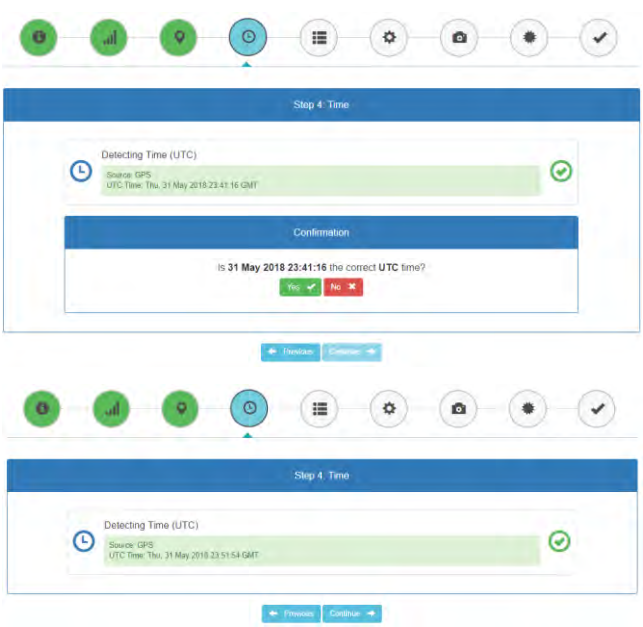
Step 5 – Time

This step verifies that the GPS, System, or Network time is correct.

The time will always be presented in UTC. There are articles on the Knowledge Base to help you work out the correct UTC.

Use the Confirmation prompt to verify the time and date presented are accurate. If the time or date are not accurate, select “no” and use the drop down at the far right of the Configure UTC Time Manually section to enter the correct UTC date and time, then select Update.

Once the time is correct, click ‘Continue’.



Manual UTC Configuration:

Step 6 – External Peripherals

During this step, the system will allow the user to configure any non-standard peripherals that may have been installed. This may include external telematics devices, an FFC, and/or the cruise control disable cable.

6.1. FFC Setup

The FFC is enabled by default. If an FFC has not been installed, toggle the slider bar to “**FFC OFF**”.

“**Save Configuration**” and select ‘System Reboot’. The system will take approx. 2 minutes to reboot.

Once rebooted, the FFC feed will be visible and the FFC can be correctly adjusted.

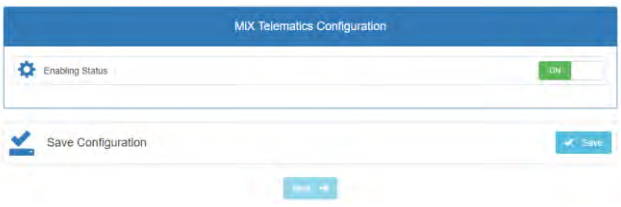
If FFC is **not** fitted, continue to the next step.

6.2. Mix Telematics Configuration.

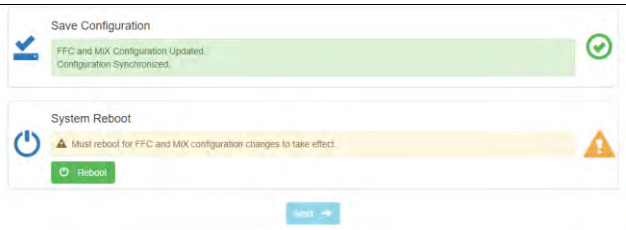
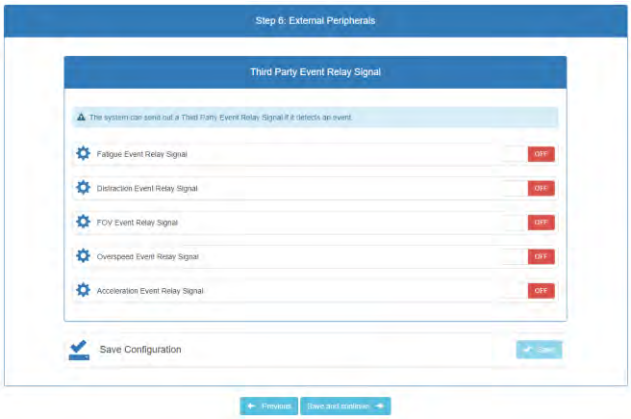
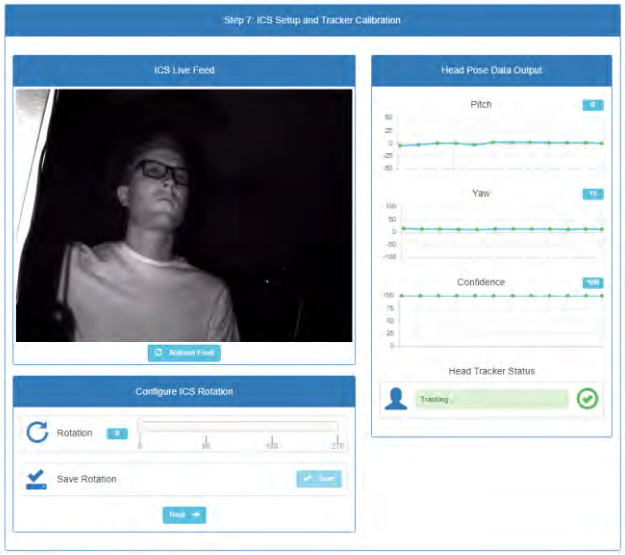
If a Mix Integration Cable is to be installed, toggle the slider bar next to Enabling Status to “**ON**”.

FFC Live Feed:

Mix Telematics Configuration:



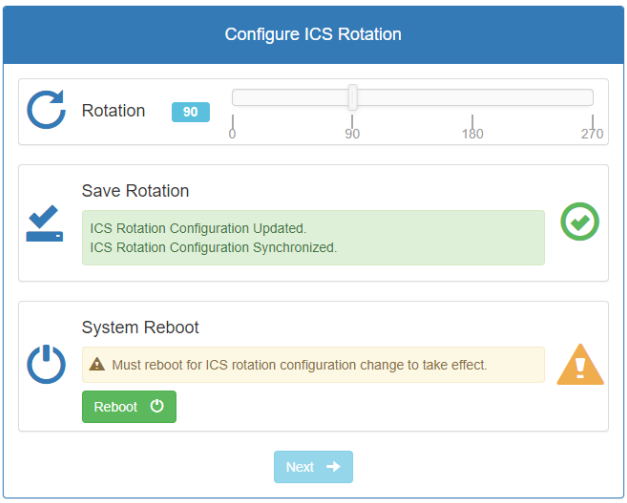
Save Configuration action:

"**Save Configuration**" and select 'System Reboot'. The system will take approx. 2 minutes to reboot. Once the reboot has completed, proceed to the next step. If a Mix Integration cable is **not** installed, move directly to the next step. 6.3 Third Party Event Relay Signal If a Cruise Control Disable Cable is installed, the cruise control can be disabled by the triggering of any of the events listed on this page. The requirement for enabling or disabling these settings will come from the party coordinating the installation. Once all changes have been submitted as desired, select "Save Configuration" Select Save and Continue	 Third Party Event Relay Signal: 
Step 7 – ICS Setup, Tracker Calibration, and Test Event Creation Using real time system feedback, this step allows you to configure the Camera Pitch and Yaw, create test events, and verify the in-cab alerts are working. Prior to beginning this test, ensure you are seated in the Driver's seat and in view of the ICS. **7.1** Camera Rotation: The Guardian system allows the installer to mount the ICS vertically to allow greater flexibility for placement. For more information on the supported installation positions reference "Mounting the ICS at a different orientation" (section 5.4.3.) earlier in this manual. The ICS can be mounted at a 0°, 90°, 180°, or 270° based on installation; however, preference is for 0° or 90° rotation only with the default set to horizontal (0°). The rotation setting in the IVS Wizard must match the actual physical rotation of the ICS.	Landing Page: 

Once set using the slider (if necessary), select "**Save Rotation**" and select 'System Reboot'. The system will take approx. 2 minutes to reboot.

You will notice the ICS video feed is longer once the reboot is complete and the page refreshes.

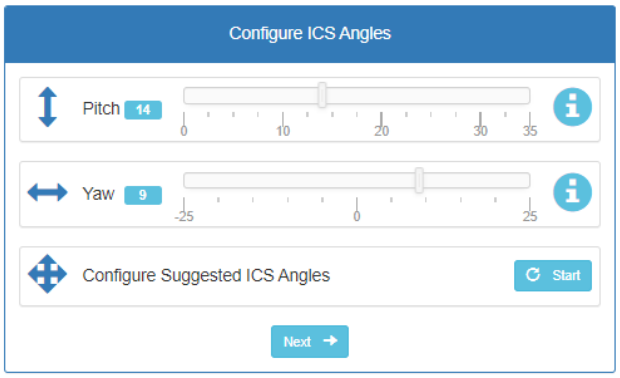
Rotation Example (90°):



7.2 Camera ICS Angle (Pitch and Yaw)

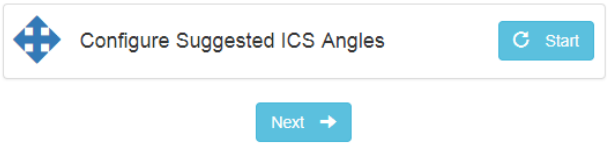
There are two ways to set the camera:

1. Using the Auto Calibration function (preferred).
2. Using the sliders for Pitch and Yaw (can be used if the Auto Calibration is not functioning properly).



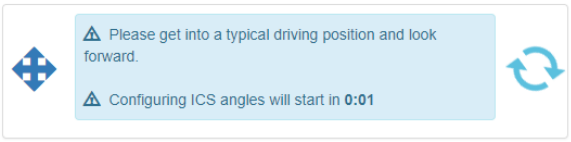
1. Using Auto Calibration to set Pitch and Yaw

Using the button ‘Configure Suggested ICS Angles’, select ‘Start’.



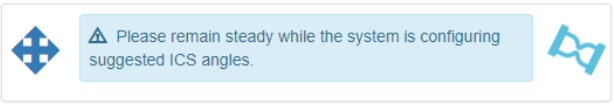
You will be prompted to get into a typical driving position (facing the road) and given 5 seconds to get steady. After this time, you will hear one beep indicating the start of the auto configuration.

Prepare for Auto Calibration



After a period of about 2-3 seconds, you will hear another audible prompt indicating the auto calibration has ended. Your results will be now be displayed in the wizard.

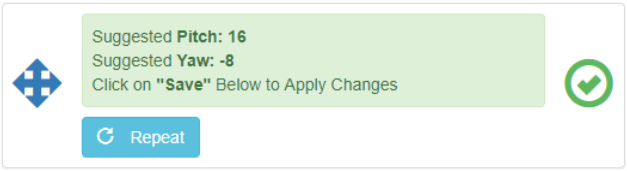
Assume typical seated position with head and eyes on road



Save these results and validate your new graph calibration graph readings are as close to 0 as possible. If necessary, select ‘Repeat’ to start a new auto calibration reading.

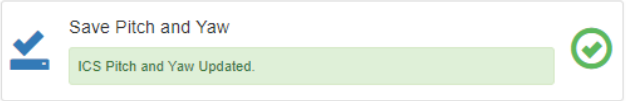
Save and Continue.

Pitch and Yaw Results



Values for pitch are 0 to 35. 0 is eye level for the driver. Slightly negative may have to be achieved if you are trying to overcome an object (i.e. steering wheel). It is acceptable to put 0 as the value if you have had to install with a slightly negative pitch.

Save changes:

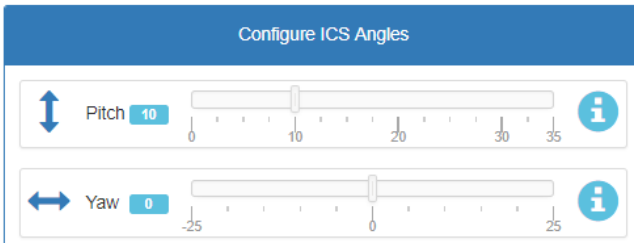


2. Pitch and Yaw using sliders:

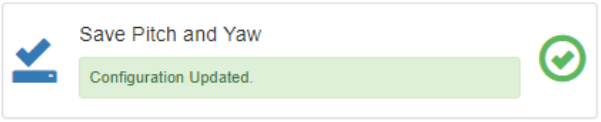
Use the slider bars to adjust the Pitch and Yaw based on the feedback provided by the live calibration graphs (located to the right of the live feed). The graph should be at or as close to zero when you are in the normal driving position.

Select “Save” any time an adjustment is made prior to reviewing the calibration graphs.

The head tracking confidence graph and the head tracking status must also indicate valid tracking and tracking confidence percentage (>70%).



Save changes:



Create Test Events:

First, select ‘Start’. The system will enter demo mode prompting you to close your eyes via text in the wizard and an audible prompt. Create a Fatigue Event (eye closure). The alarms and seat vibration should activate.

Tick the boxes to confirm that you heard the audio and felt the vibration motor.

Click ‘Next’

Use the ‘Repeat’ button to conduct the test again.

Repeat the same process for a Distraction Event (head rotation away from forward).

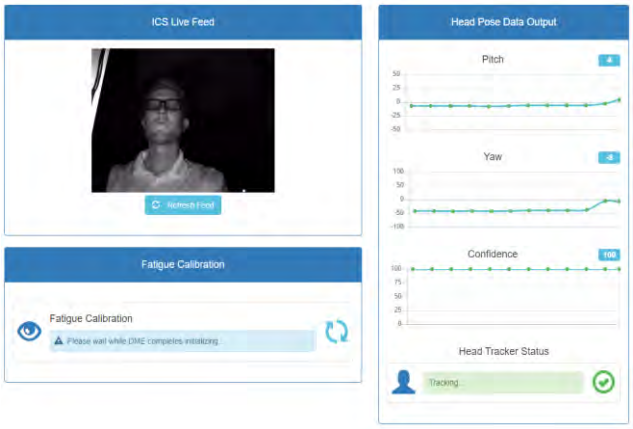
Note - there is a new Calibration graph on this step to indicate when the *On-Road Direction Calibrator Status* has been successfully configured, it will turn to green when it is ready for you to conduct the test via text in the wizard and an audible prompt.

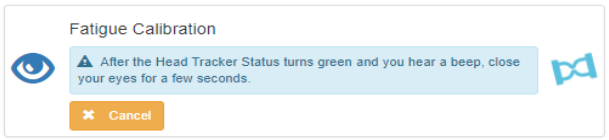
Click ‘Continue’.

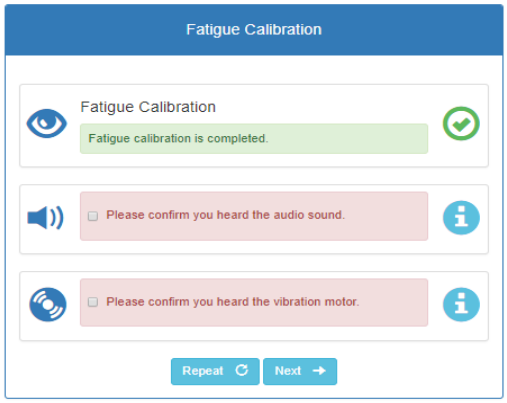
Use the ‘Repeat’ button to conduct the test again if needed.

Once you have created your test events for each event type, select “Next”. These test events will be uploaded to Guardian Live as part of the installation validation process.

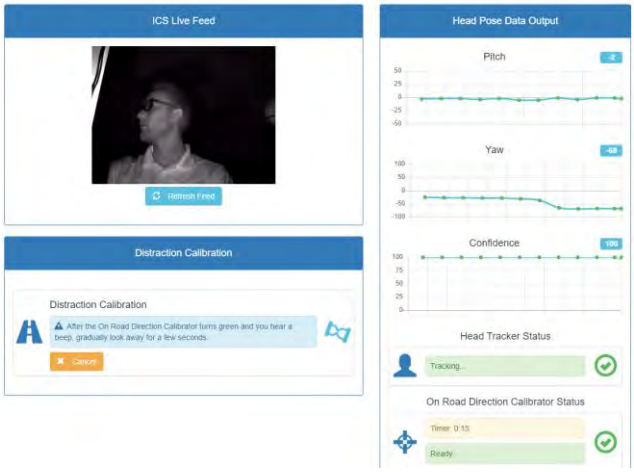
Detect Fatigue:

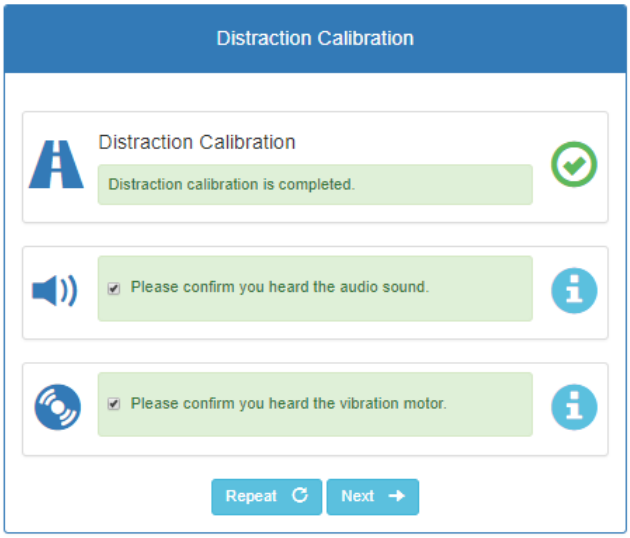






Create Distraction:





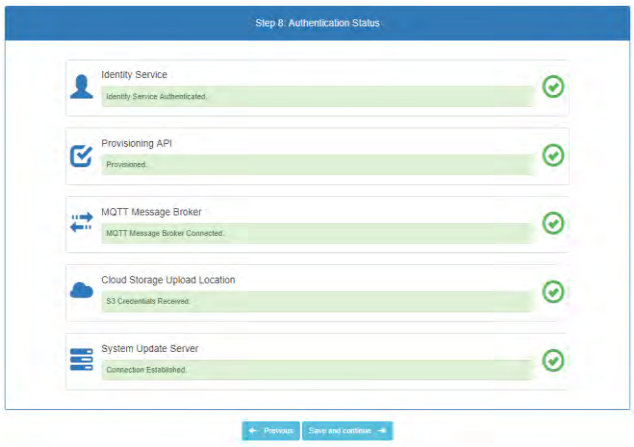
Step 8 – Authentication Status

This step verifies that the system is Authenticated on the AWS server.

The system will work through these steps automatically. When all boxes are green, and ticks appear you can proceed to the next step.

If at any point you are unable to get a successful message on a step in the Authentication status, call Seeing Machines to ensure there is no issue on the server. You may select try again, however, if they continue to fail, Seeing Machines Support will need to rectify.

Click ‘Continue’.



Step 9 – Review

This step confirms that all previous steps are complete and will indicate if an error has been detected (yellow or red symbols). If you see red X's against any steps, you will have to return to that step (using the Icon button on the top or to the left) and conduct troubleshooting. Alternatively, you can call 24/7 Support for assistance.

If Orange icons are present, they should be reviewed and corrected (if possible) before completing the installation. Should you require assistance, contact Seeing Machines Support

If everything is ticked Green, click 'Complete'.

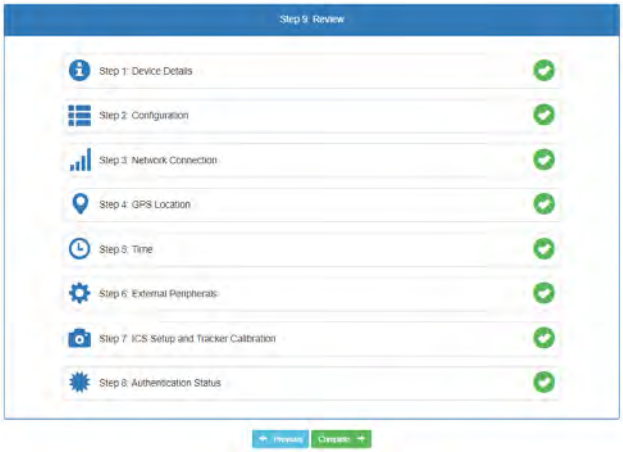
The system has now completed the installation wizard setup process and will attempt to upload the installation report. You can download a copy of the installation report directly to your computer by selecting the Download Install Report button. The document will be downloaded as a .tar.gz file called 'SystemSerialNumber_InstallationDateTimestamp(UTC)_install_report.tar.gz'.

Once unzipped, the file names are 'SystemSerialNumber_InstallationDateTimestamp(UTC)_InstallReport.json'. These can be opened via Notepad ++.

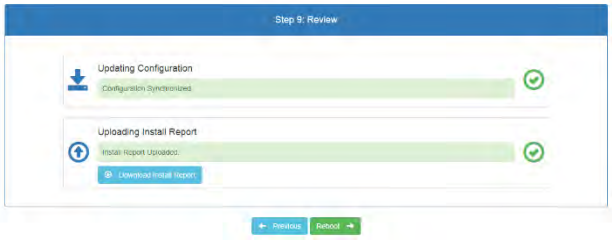
If the system was not able to communicate to the network, the installation report will not be uploaded as indicated by a red X. You will need to download the installation report then upload the file to 24/7 Support (support@seeingmachines.com).

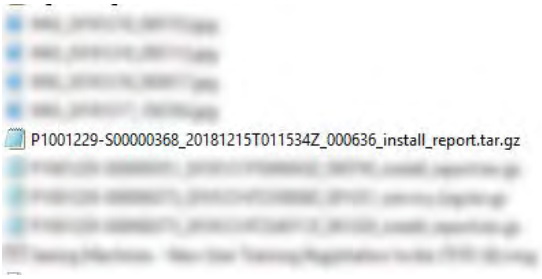
The upload of the Install Report is required to complete the installation validation process, when it is not automatically uploaded.

Select "Reboot".

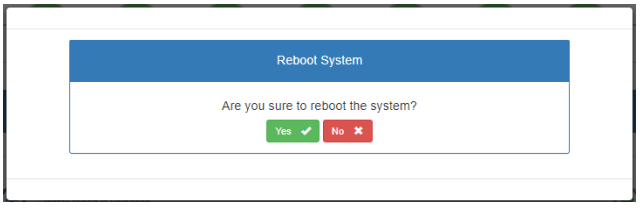


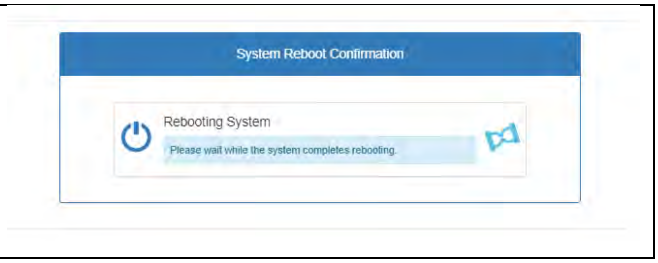
Install Report





The Software Installation is now complete, and the Wizard will prompt you to reboot the system.



	 System Reboot Confirmation Rebooting System Please wait while the system completes rebooting.

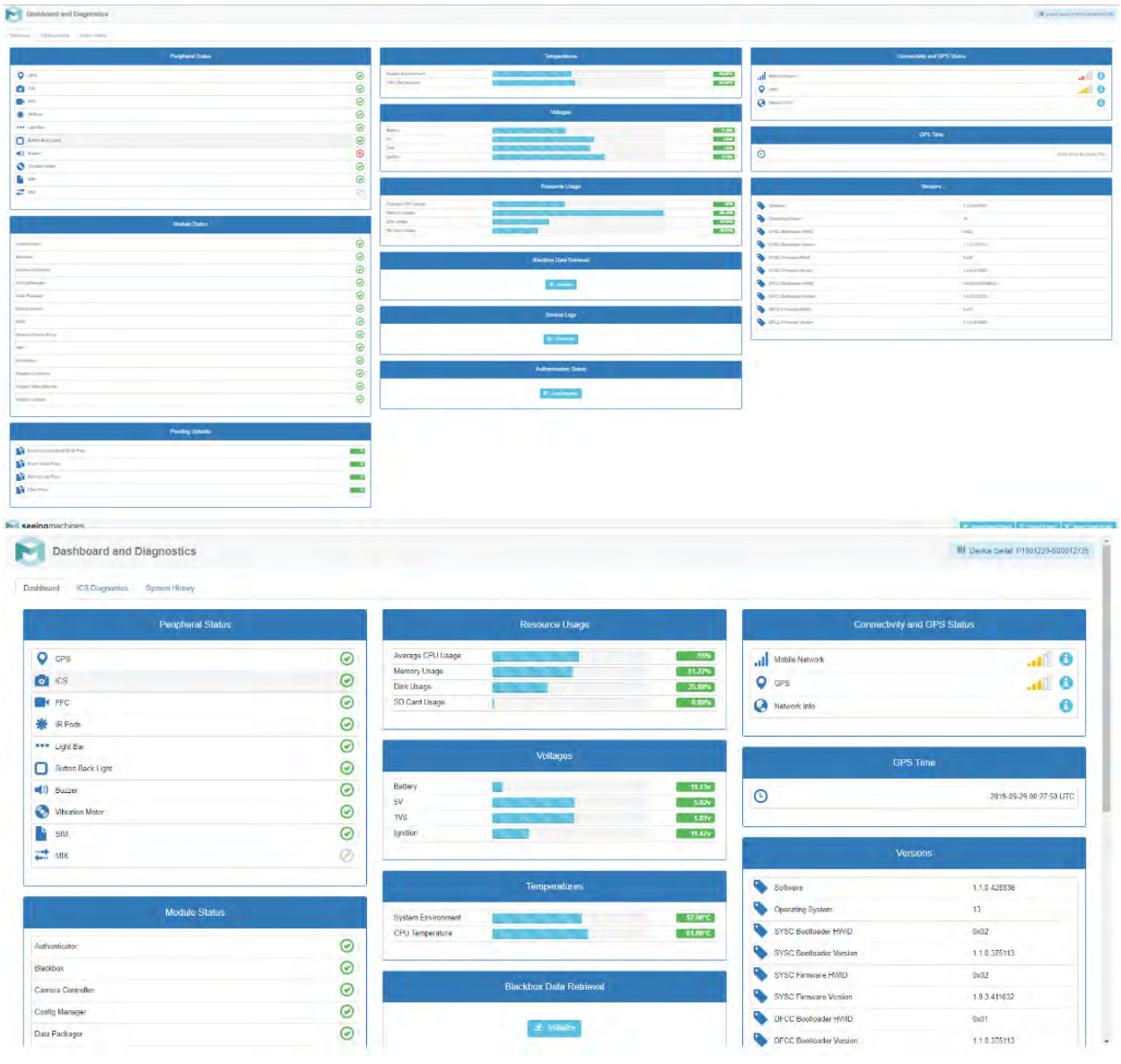
6.3 SYSTEM CHECKS

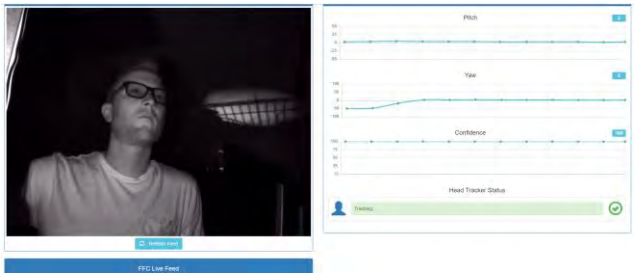
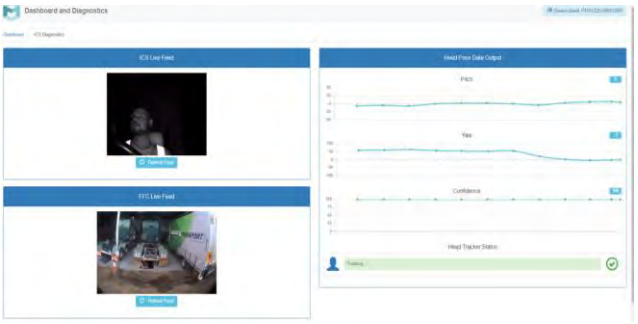
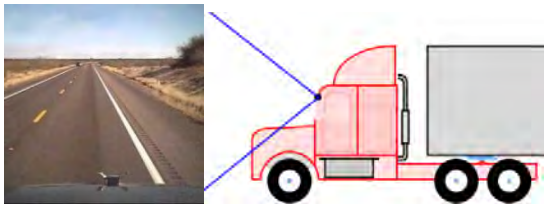
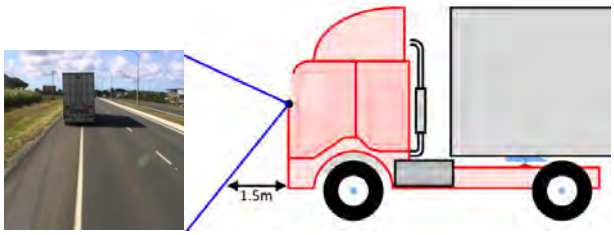
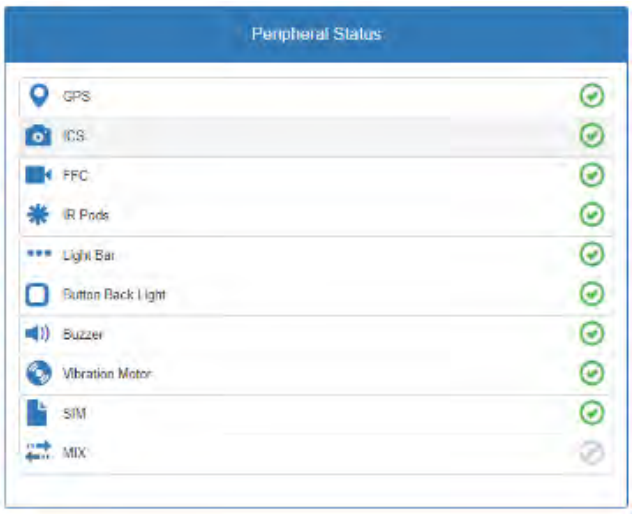
System Checks

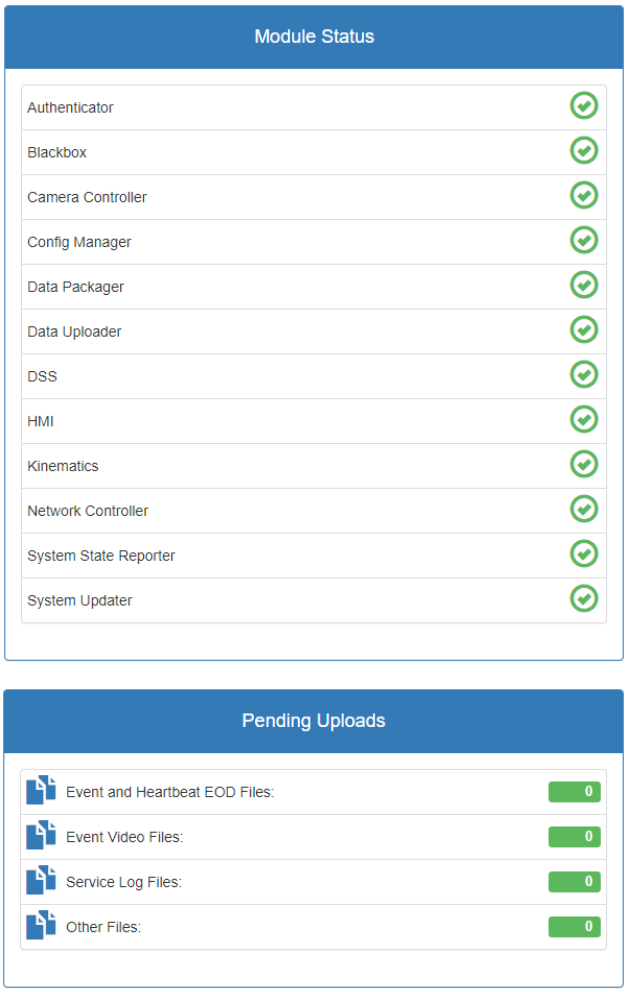
After the Installation Wizard been completed, you need to complete some system checks to ensure the system is running optimally.

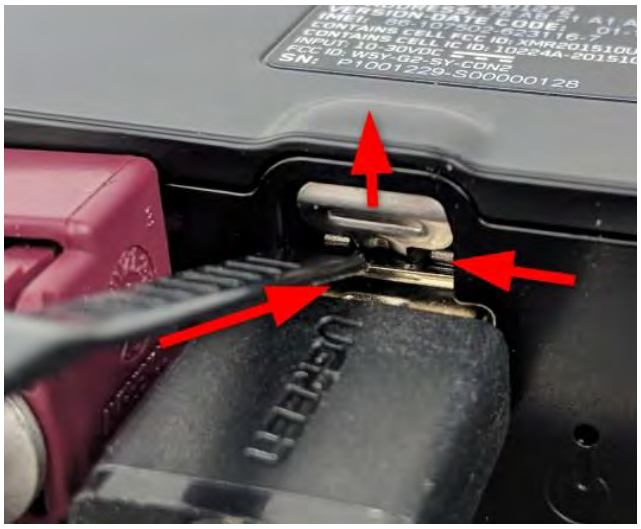
Users are required to navigate to the Dashboard page in order to complete these System Checks.

\



Tracking Tests: In the ICS Diagnostics tab, make final adjustments to the ICS to ensure that tracking is maintained in multiple seating positions (high, low, close, further away etc).	
Forward Facing Camera Position: In the ICS Diagnostics tab, observe the FFC video feed.	
Bonnet - Adjust the camera so that: • The top of the image sees the horizon. • The bottom of the image sees the top of the bonnet.	
No Bonnet - Adjust the camera so that: • The top of the image sees the horizon. • The bottom of the image sees 1.5m in front of the vehicle.	
Confirm there are no System Errors or pending Uploads: Refer to TCP Knowledge Base for error resolution or call 24/7 Support.	

	
The vehicle can be turned off	

To remove your USB to Ethernet adaptor you will need to lift the release pin on the Controllers USB port, and pull out the USB to Ethernet Adaptor. Take care when removing the adaptor.	
The easy way to do this is to push a piece of zip tie into the latch	
And lift the release tab	

Then pull out the USB port	
Note: Any USB port with the 2 square holes shown in this image will lock into the Controller USB devices without these holes won't latch.	
This concludes the software setup. **You can now Allocate the vehicle with 24/7 Support**	

6.4 24/7 SUPPORT DETAILS

24/7 Support Center

System Registration | Configuration | Troubleshooting

support@seeingmachines.com

USA: +1 855 377 4636

Australia: +61 2 6108 4313

Mexico: +1 520 838 8138

UK: +44 808 164 5774

South America: +56 2 2938 1718

Technical Communications Portal

Support Manuals | Updates | Knowledge Base | Resources

tcp.seeingmachines.com

6.5 ALLOCATING A VEHICLE

Vehicle Allocation	
Calling 24/7 Support with your filled in Checklist will activate a vehicle in Guardian Live and will allow the Client or Distributor to be able to review events in their fleet(s).	
Call the 24/7 Support number above and be ready to tell our support team;	• Your name (First and Last). • The email address you would like the Zendesk installation ticket sent to. • The client account and site the vehicle should be allocated to. • The information on the Checklist: - P (number), - S (number), - Vehicle ID (e.g. TRUCK123), - Make of the vehicle (e.g. Kenworth), - Model of the vehicle (e.g. T909), - SIM card serial number, - Power routed via isolation switch Y/N, - Power routed via non-essentials switch Y/N, and

	- Any optional extras installed Y/N.
The support team will give you a status of what they see over the network to make sure it is running correctly. Then an email will be sent to you confirming the installation. You will need to reply to this email with a scanned copy (this can be a photo) of the Installation Checklist, this is required for proof of warranty.	
The Allocation setup is now complete, you can now finish the installation.	

7 FINALISING THE INSTALLATION

Finalising the Installation	
Note: These activities should be completed before leaving the vehicle, but after completing the rest of the install.	
Tuck all the cables in to the relief and slide the cover plate into position.	  

Screw the T20 bolts to lock the Controller Cover onto the Controller.	
Place the controller in the Mounting Pan and screw the T20 Mounting Pan screws tight.	
Be respectful to the vehicle owner/driver and leave the vehicle the way you found it. Remove any off cuts and sweep out any shavings you may have left behind.	
All packaging (besides the plastic bags) is recyclable. Please dispose of it appropriately either at the installation site or take it with you if no bins are available.	

7.1 FINAL QA

Final QA

At the end of the installation a final Quality Assurance (QA) check is required to be conducted. You must check the following:

1. All components of the system have been installed.
2. Cables are zip tied, excess lengths are removed, and the cables do not interfere with the normal function of the vehicle.
3. Cables are hidden from view (as much as possible).
4. All vehicle pieces and fasteners are returned to the correct place on the vehicle.
5. The system powers down when the key is turned off.
6. All rubbish has been removed from the vehicle and disposed of appropriately.
7. You have removed all your tools.
8. You have taken the photos as required in the installation checklist.
9. You have completed and signed the installation checklist.
10. You have retained all the installation paperwork and photographic evidence of the install.
11. You have notified the site manager that the truck is ready for release and they have signed off on the checklist.

INSTALLATION IS NOW COMPLETE