

FAMA LITE Installation Guide

ADD-I-048-02

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MASTERY OF THE DOCUMENT

	Name	Function	Date	Visa
Written by:	A. SENECHAL	Embedded system engineer	02/22/2024	AS
Verified by:	A. LATHIERE	Embedded system manager	02/22/2024	AL
Approved by:	S. RAVETTA	Quality manager	02/22/2024	SR

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Description

This document describes how to install and program a FAMA LITE on a GSE.

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1 Composition of the installation kit

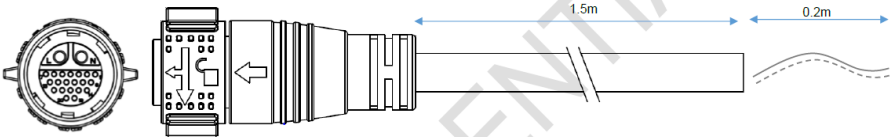



FAMA LITE	
Main cable (22pts)	
HID reader	
Radio/GNSS Antenna	
Key contact (shunt)	

Table 1: Installation Kit Composition

2 System wiring






Figure 1: FAMA LITE wiring

2.1 Main cable

OUTPUT WIRING CHART				Designation	Connection	Specification		
L	AWG22	CT	ORANGE	WHITE	Access Control relay contact	Start contact	Contact normally open and closed Vmax=300V 9-80 VDC	
N	AWG22		ORANGE					
L	AWG22	BYPASS KEY	YELLOW	WHITE				Key contact (shunt)
N	AWG22		YELLOW	WHITE	Normally closed			
1	AWG22	NC	WHITE		System power	+ GSE battery		9-80V DC
2	AWG22	ALIM +	RED			- GSE battery		
3	AWG22	ALIM -						
4	AWG22	P +	BROWN		Contact entry	+ Ignition	9-80V DC	
5	AWG22	P -	BROWN	WHITE		- Ignition		
6	AWG22	WORK +	PURPLE		Work mode input *	+ Work	9-80V DC	
7	AWG22	WORK -	PURPLE	WHITE		- Work		
8	AWG22	SH -	GREEN	WHITE	Information shunt access control	Key contact (shunt)	Normally open contact	
9	AWG22	SH +	GREEN					Common
10	AWG22	GND						
11	AWG22	GSECANH	YELLOW		GSE CAN Data Bus	CAN High / CAN	CAN H	
12	AWG22	GSECANL	BROWN			Low GSE	CAN L	
13	AWG22	AUXBRANCH	GREY		Auxiliary CAN Data Bus	CAN High / CAN	CAN H	
14	AWG22	TOCANL	BLUE			Low auxiliaire	CAN L	
15	AWG22	12V READER	RED		External drive connection	+ Reader		
16	AWG22	GND				- Reader		
17	AWG22	DATA0	WHITE *			DATE0/CLK or DAT0		
18	AWG22	DATA1	GREEN *			DATE1 / CLK or DAT1		
19	AWG22	IHM_CTRL_1	BLUE			GRN or GLED		
20	AWG22	IHM_CTRL_2	BROWN			BEEP		

Table 2: Main cable detail

- *  : FAMA provides a single entry to collect hour meter or GSE work information. In order to collect both information, one of them will have to be retrieved either through the CAN bus or through the use state (Use) for the timestamp and the other thanks to the input provided by the FAMA.
- *  : In order to differentiate the two brown wires, the yellow and brown wires, used to wire the GSE CAN Data Bus, are twisted. The twist is light, it will be necessary to be careful when locating the wires to avoid any error.
- *  : The wiring of the Reader has changed, the wires of DATA1 and DATA0 are no longer the same (inversion of the colors of the wires DATA1 and DATA0 compared to the FAMA V4).

3 Wiring recommendations

Below are the different wiring techniques to guarantee a long-term and quality installation:

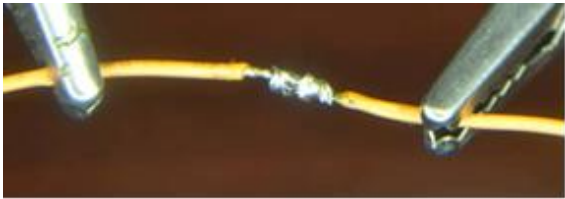

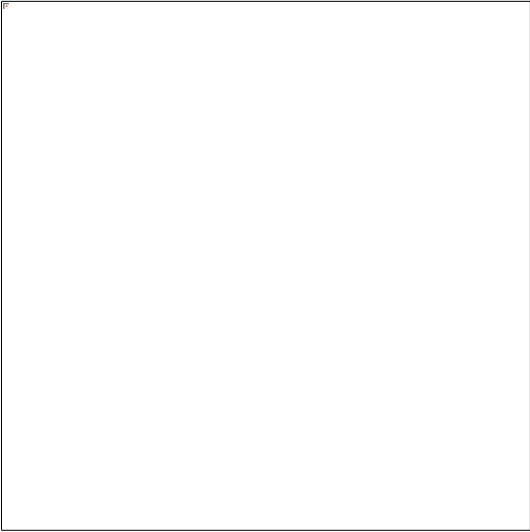
✓ ACCEPTED	✗ DO NOT ACCEPTED
<p>Soldering and insulation of the wire (heat shrink sheath or insulating adhesive tape):</p> 	<p>Twisted or non-insulated wire:</p> 
<p>Crimping connectors:</p> 	

Table 3: Wiring Recommendations

4 Example of connection on a GSE

Below is the electrical diagram of a diesel luggage belt:

- ALIM+: 12V
- ALIM-: GND
- P+: after contact neiman
- N/L: neiman starter contact
- WORK+: forward/backward belt

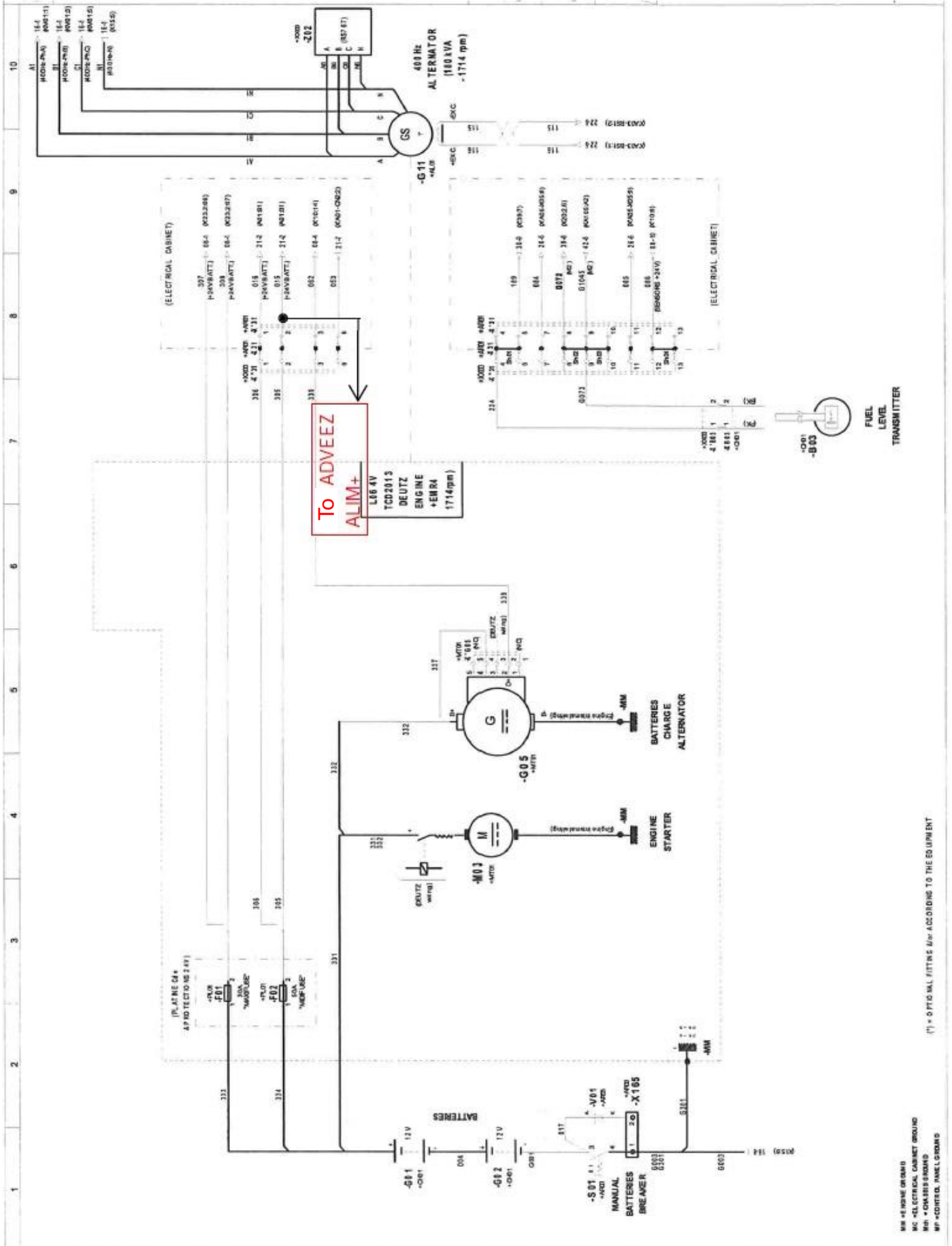


Figure 2: Electrical diagram 1/5

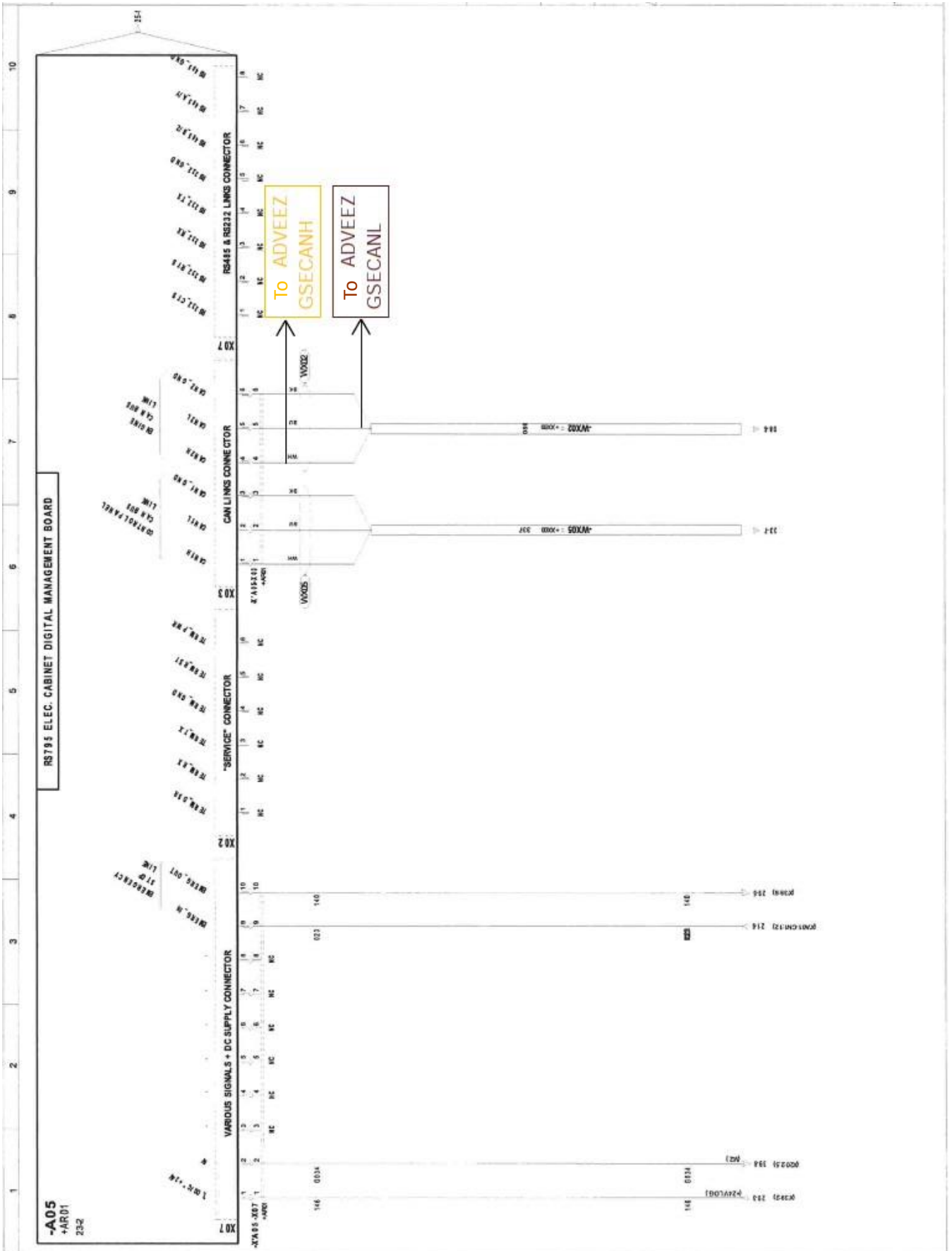


Figure 3: Electrical diagram 2/5

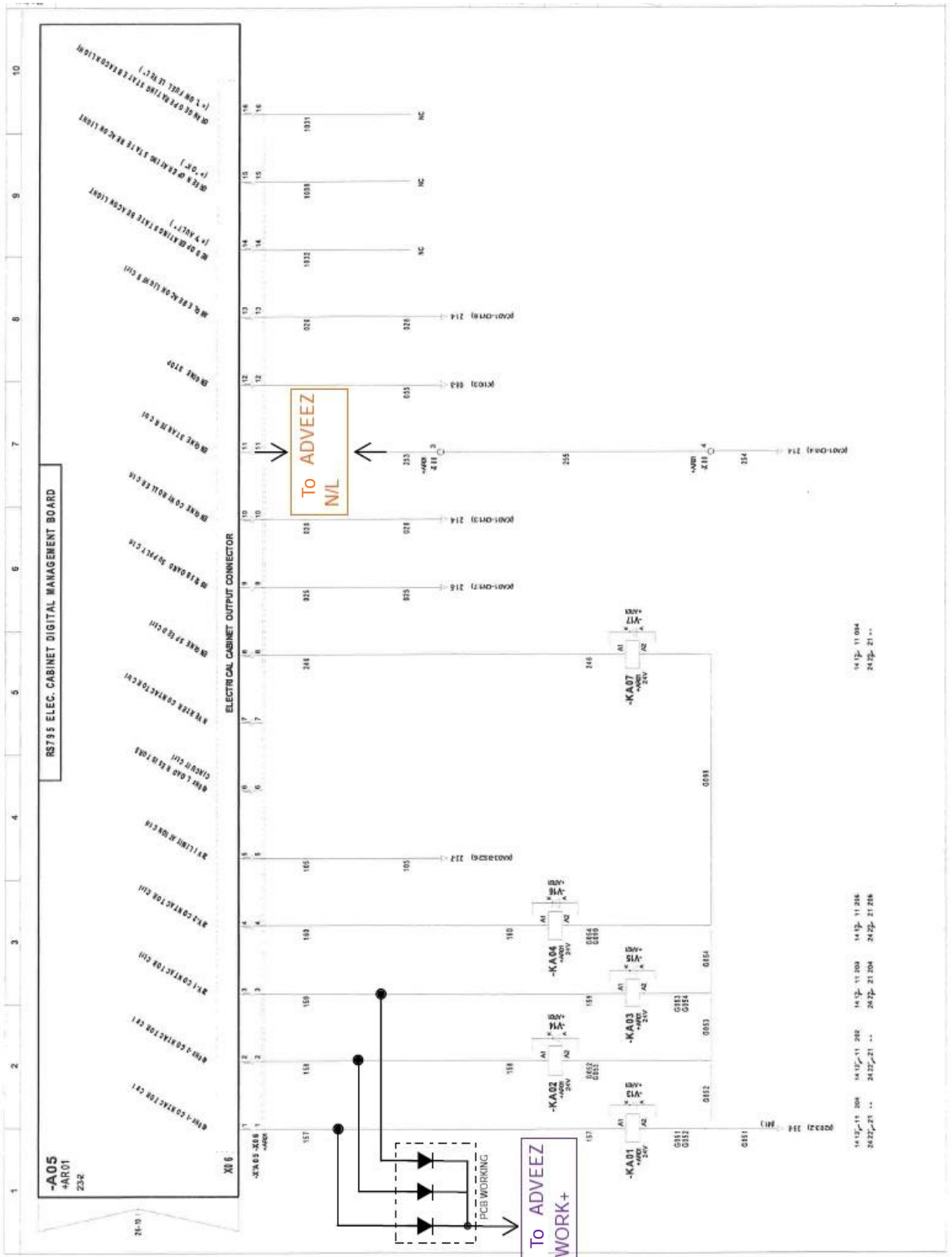


Figure 4: Electrical diagram 3/5

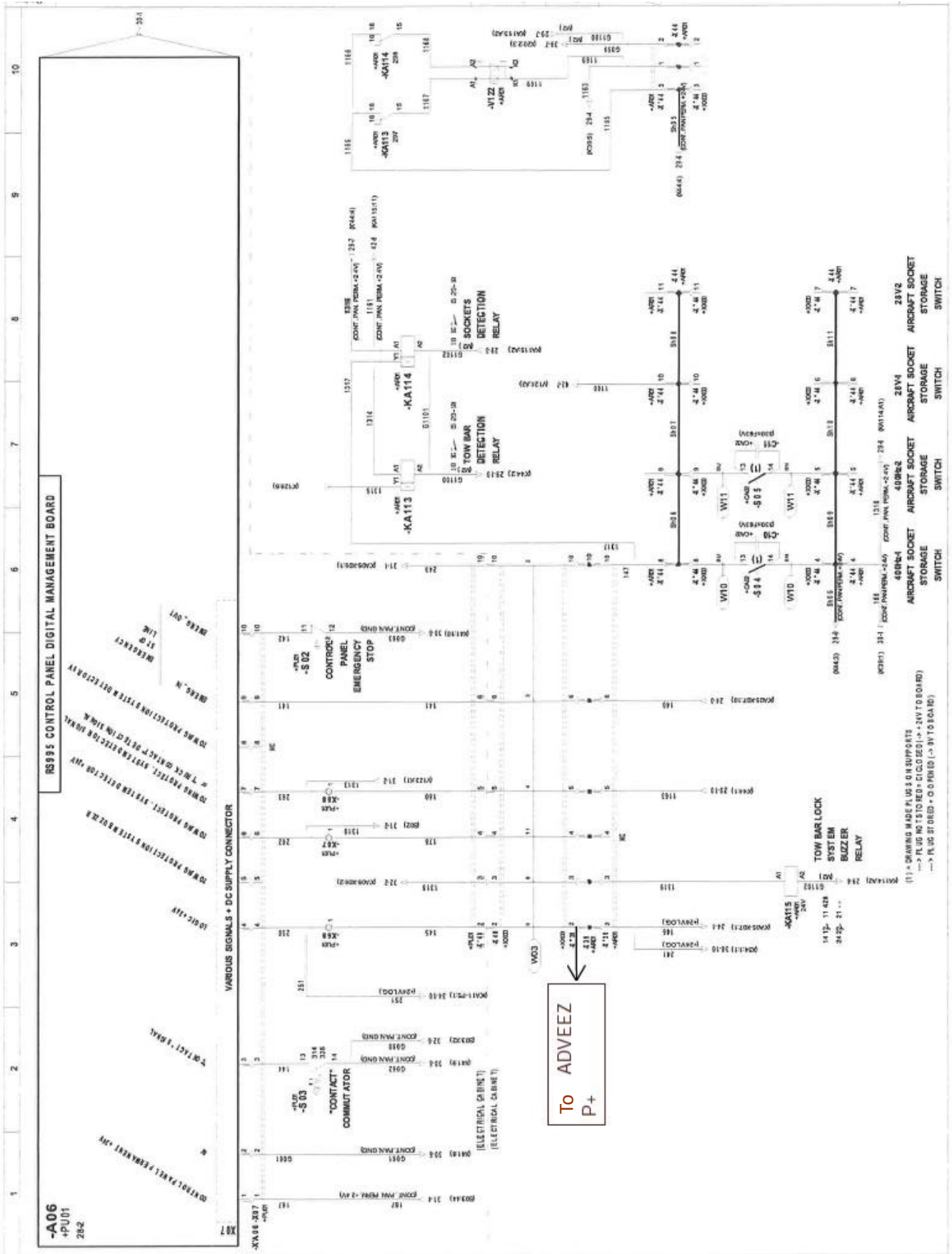


Figure 5: Electrical diagram 4/5

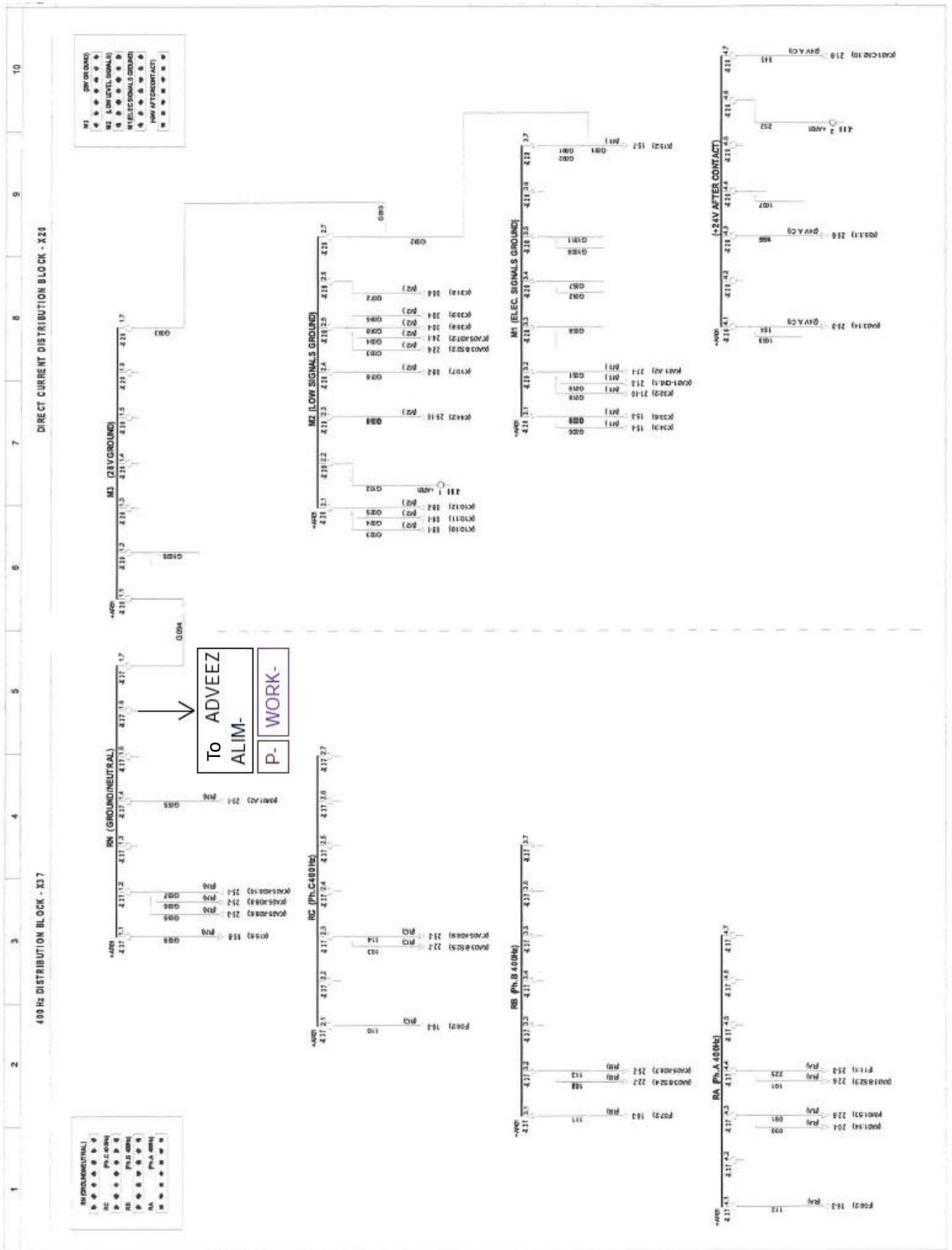


Figure 6: Electrical diagram 5/5

5 Positioning Examples

Be careful, the box should never be placed with the connectors facing up so as not to force on the connectors and to avoid bending the cables too much to avoid possible degradation.

The placement of the box influences the configuration of the axis of the Scoring, the FAMA must be positioned in such a way that it respects an axis (x, y or z).

5.1 Luggage tractor

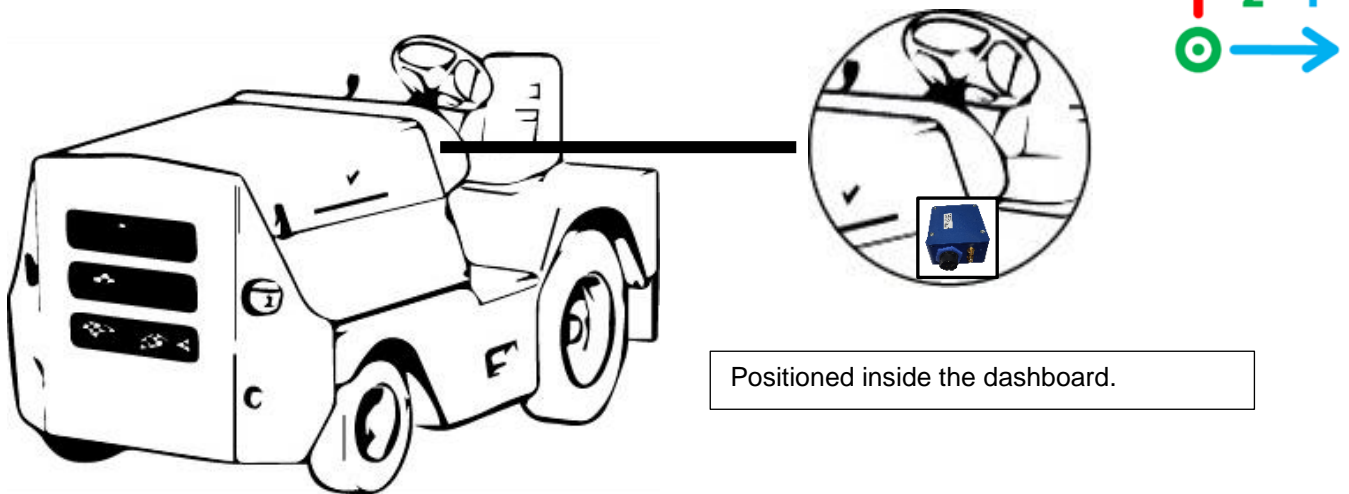


Figure 7: Baggage tractor

5.2 GPU

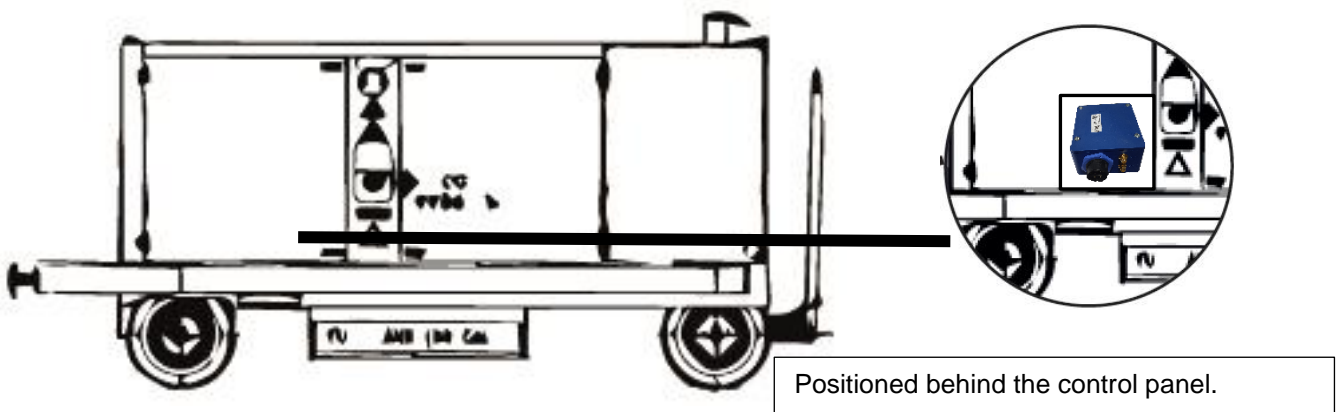


Figure 8: GPU

5.3 Push Back

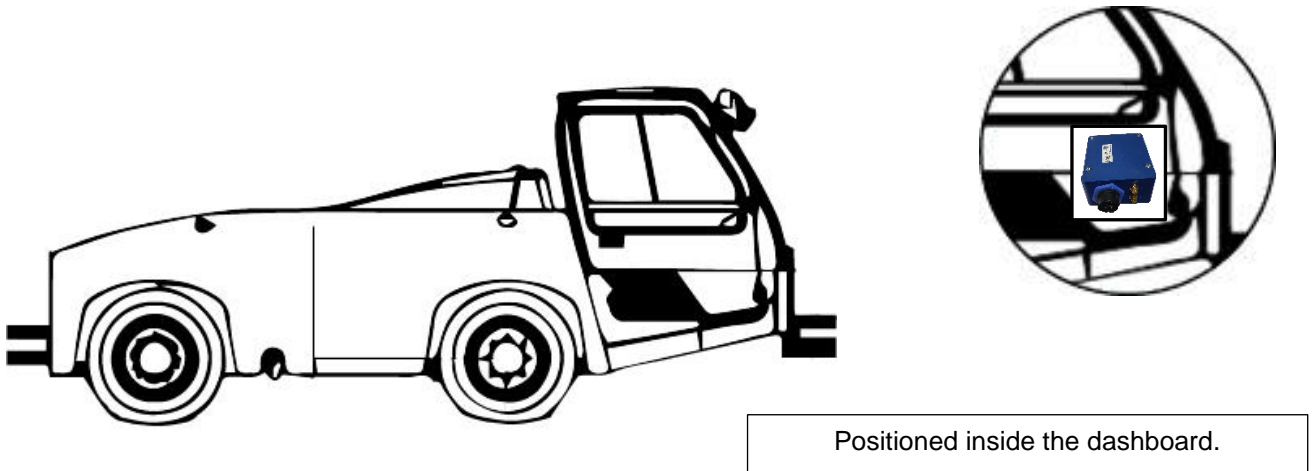


Figure 9: Pushback

6 Configuring and diagnosing Adveez equipment with LHC Mobile

After installing equipment (FAMA) on a GSE, it can be configured with LHC Mobile.

To configure/verify settings, follow the steps below.

All functions and settings are listed in this chapter, troubleshooting steps are also provided at the end of the document.

Before anything else, you will need to download the **LHC Mobile** app available on the Android and AppStore platforms.

6.1 Add equipment

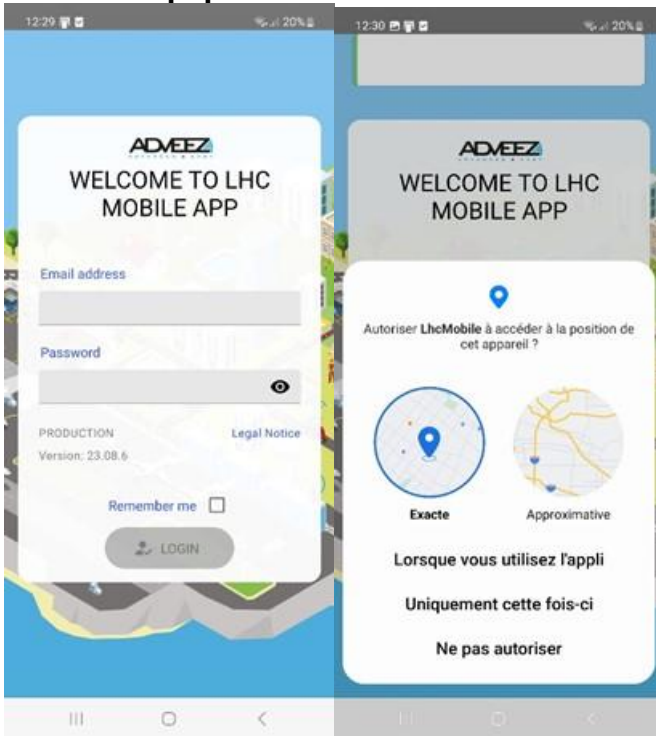


Figure 10: LHC Mobile authentication

1. Open the LHC Mobile app.
2. Log in with your email address and password.
3. Click on "Log in".
4. Allow LHC Mobile to access the mobile phone's position, Bluetooth and GNSS.

Once logged in, the home page opens. The page shows all the FAMA nearby. Each FAMA has 3 pieces of information: the serial number (which identifies it), the BT ID (Bluetooth module identifier that differentiates between two FAMA for which the same identifier has been entered) and the RSSI (gives an indication of the distance of the FAMA from the mobile phone).

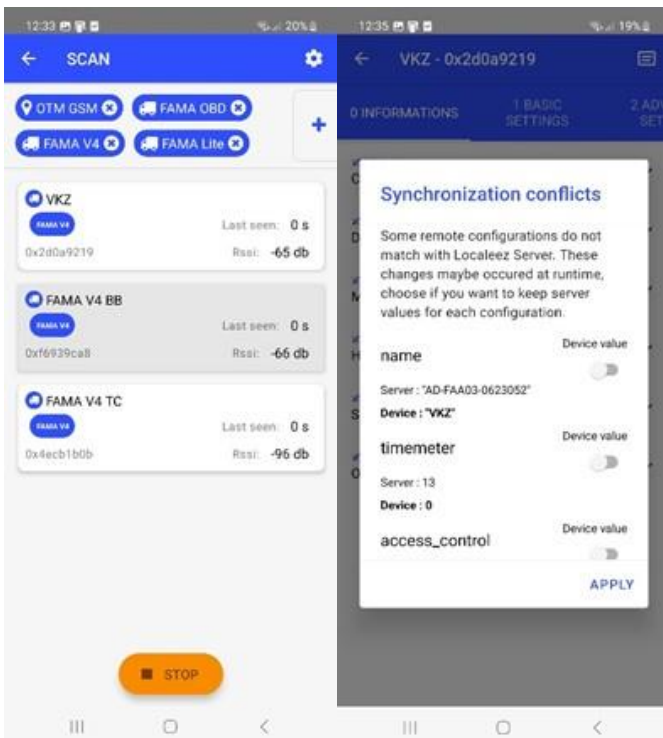


Figure 11: LHC Mobile software

5. The FAMA serial number or GSE ID should be displayed on this window. If the FAMA comes out of production (never registered), it will be identified by its serial number. For example, AD-XXXX-XXXX-XXX. This number is also marked on the FAMA label.
6. The RSSI of the connection is given by the RF force in (db). Connection to FAMA will be impossible when the RSSI value is lower than (-80 db).

After selecting your FAMA, conflict synchronization is mandatory. A conflict is a configuration difference between the FAMA and the Localeez server.

6.2 INFORMATION

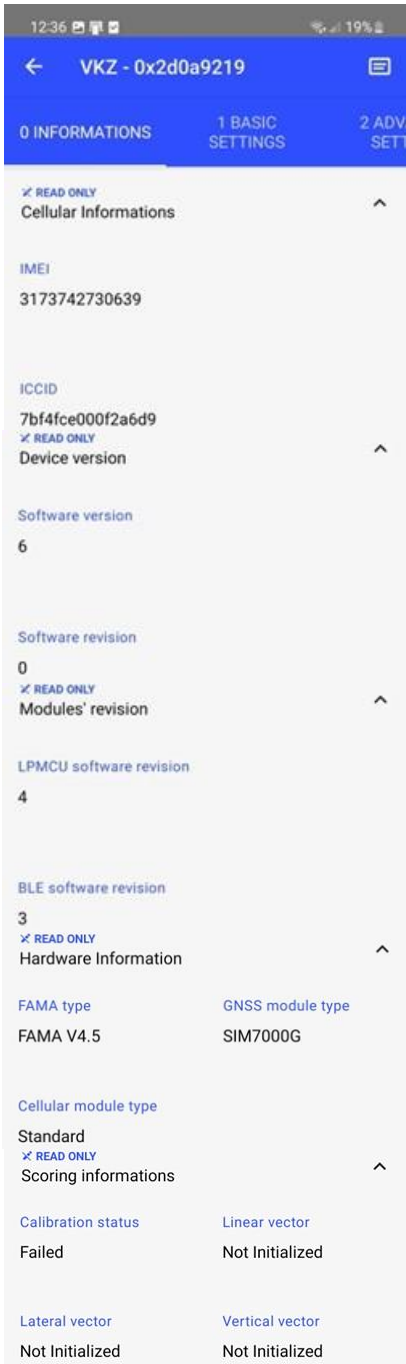


Figure 12: INFORMATION 1/2

Cellular information:

- IMEI: Gives the physical number of the GSM module of FAMA.
- ICCID: Gives the physical number of the SIM card inserted into the GSM module of the FAMA.

Device version:

- Software version: Gives the version of the software.
- Software revision: Gives the revision of the software.

Module's revision:

- LPMCU Software revision: Gives the BLE module version.

Hardware information:

- Hardware revision: Gives the software version.
- GNSS module type: Gives the type of GNSS module used.
- Cellular module type: Gives the type of GSM module used.

Scoring informations:

- Calibration status: Allows you to know the status of the calibration.
- Linear, Vertical, Lateral vector: Allows you to know the configured axes.

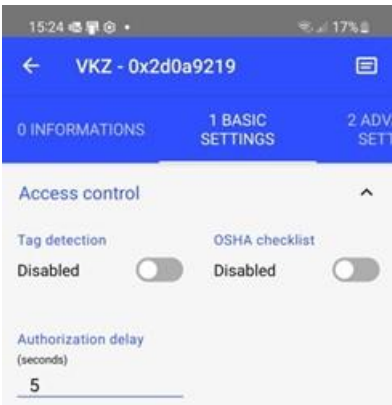


Figure 13: INFORMATION 2/2

Other:

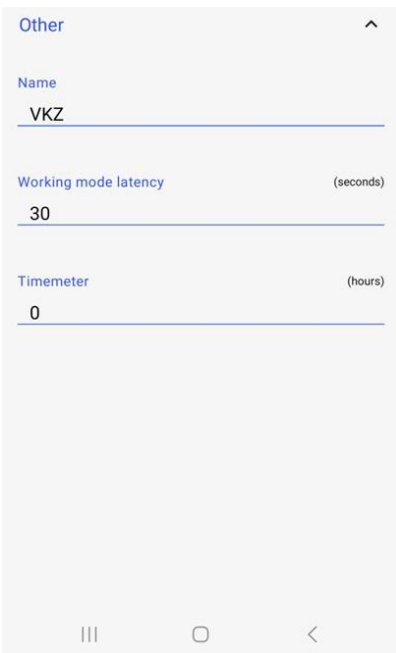
- Internal backup battery: Gives the charge level of the FAMA's internal battery (⚠ the true value is displayed only when the FAMA is not connected to an external power source).
- Cellular active connection: Allows you to know the status of the LTE connection.
- Date Time: Gives the date of the FAMA.

6.3 BASIC SETTINGS



Access control:

- Tag detection: Enables or disables access control for FAMA.
- OSHA checklist: Enables or disables the OSHA questionnaire for FAMA.
- Authorization delay (seconds): Allows you to change the delay (in seconds) of the release of the access control relay.



Other:

- Name: Allows you to change the name of the FAMA. Usually, the name of the Fama is the ID of the GSE.
- Working mode latency (seconds): Allows you to add a timer (in seconds) before considering a working event as closed. When a working event is stopped, the timer starts. If a new working event occurs during this delay, the previous event is restarted.
- Timemeter: Used to give FAMA the number of hours of the GSE hour meter.

Figure 14: BASIC SETTINGS

6.4 ADVANCED SETTINGS

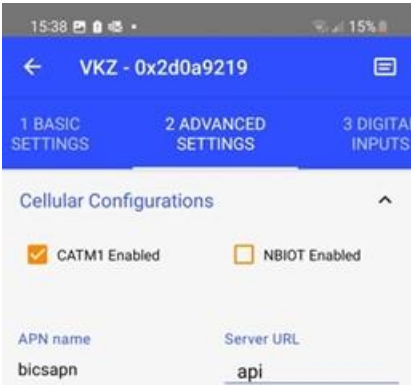


Figure 15: Cellular Configurations

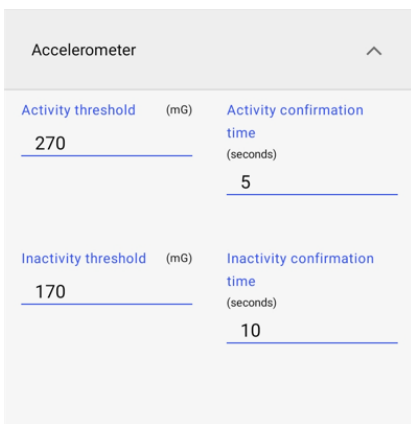


Figure 16: Accelerometer

Cellular configurations:

- CATM1 Enable: Allows you to enable or disable this type of communication. (Do not change these settings unless requested by support).
- NBIOT Enable: Allows you to enable or disable this type of communication. (Do not change these settings unless requested by support).
- APN name: Specifies the Name of the Access Point.
- Server URL: Allows you to modify the frame receiving server. (Do not change these settings unless requested by support).

Accelerometer:

- Activity threshold (mG): Allows you to configure the acceleration threshold above which the FAMA is considered moving (Do not change these parameters unless requested by our support).
- Activity confirmation time (seconds): Allows you to configure the minimum time during which the activity threshold must be crossed for the FAMA to be considered in motion (Do not change these parameters unless requested by our support).
- Inactivity threshold (mG): Allows you to configure the acceleration threshold below which the FAMA is considered stationary (Do not change these settings unless requested by our support).
- Inactivity confirmation time (seconds): Configure the minimum amount of time during which the inactivity threshold must be crossed for the FAMA to be considered still (Do not change these settings unless requested by our support).

GNSS filters	
HDOP	PDOP
2.01	2.01
Strict HDOP	Strict PDOP
0.91	1.21

Figure 17: GNSS filters

GNSS filters:

- HDOP: Maximum quality of horizontal positioning (Horizontal Dilution Of Precision) for considering GNSS data in the case of periodic treatments (geofence, monitoring, ...). This parameter is in addition to the PDOP (see below). Both parameters must be valid for the position to be considered.
- PDOP: Maximum 3D positioning quality (Position Dilution of Precision) for considering GNSS data in the case of periodic processing (geofence, monitoring, ...). This parameter complements HDOP (see above). Both parameters must be valid for the position to be considered.
- Strict HDOP: Maximum quality of horizontal positioning (Horizontal Dilution Of Precision) for considering GNSS data in the case of punctual treatments (i.e., events). This parameter is in addition to the Strict PDOP (see below). Both parameters must be valid for the position to be considered.
- Strict PDOP: Quality of maximum 3D positioning (Position Dilution of Precision) for considering GNSS data in the case of punctual treatments (i.e., events). This parameter complements Strict HDOP (see above). Both parameters must be valid for the position to be considered.

Scoring thresholds	
Acceleration threshold	Brake threshold
0.16	0.16
Lateral threshold	Vertical threshold
0.16	0.368

Figure 18: Scoring thresholds

Scoring thresholds:

- Acceleration threshold: Allows you to configure the acceleration threshold before the FAMA will not trigger an event. (Do not change these settings unless requested by our support).
- Brake threshold: Allows you to configure the sudden braking threshold before the FAMA will not trigger an event. (Do not change these settings unless requested by our support).
- Lateral threshold: Allows to configure the sharp turn threshold before the FAMA will not trigger an event. (Do not change these settings unless requested by our support).
- Vertical threshold: Allows to configure the abrupt jump threshold before the FAMA will not trigger an event. (Do not change these settings unless requested by our support).



Other:

- GNSS period standby (minutes): Allows to configure the period at which the FAMA will send its position when it is in standby.
- GNSS period use (seconds): Allows to configure the period at which the FAMA will send its position when it is "in use".
- Idle delay (seconds): Allows you to configure how long the FAMA sends the inactivity information: the vehicle is "in use" but the GNSS position has not changed since the defined period.
- GNSS fix timeout (seconds): Configure the maximum waiting time for GNSS to set before sending information to Localeez.
- ASU Mode: Allows you to set the FAMA in ASU mode. In this mode, the FAMA sends an alert if the vehicle moves while in use.
- Ask new period (minutes): Configure the period for requesting notifications by FAMA to Localeez.
- Period latency before sleep (minutes): Configure the period when the FAMA goes to sleep after the pedal is released or after turning off the ignition.
- Reader type: Permet de configurer le type de lecteur utilisé (Adveez 433Mhz (EU seulement), Adveez 908Mhz (US seulement) ou Eternal Reader (HID)).
- GNSS constellation: Permet de choisir le système de positionnement par satellites (GPS only, GPS and GLONASS, GPS and BeiDou ou GPS and Galileo).

Figure 19: Other

6.5 DIGITAL INPUTS

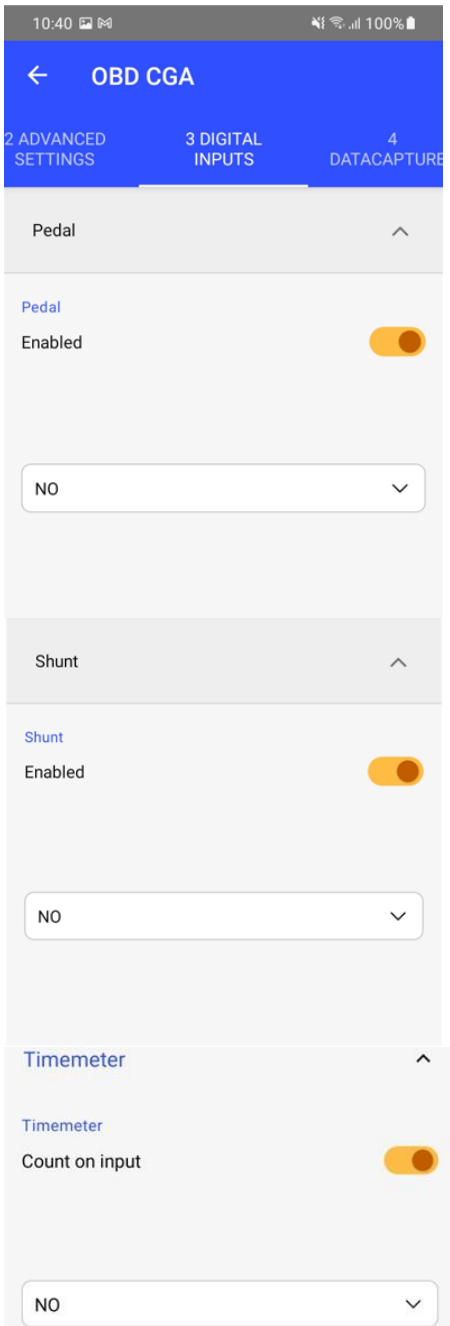


Figure 20: DIGITAL INPUTS 1/2

- Pedal: Allows you to activate or deactivate the Pedal input and change the type of contact. This can be changed to NO (Normally Open) or NC (Normally Closed).
- Shunt: Allows you to enable or disable the Shunt input and changes the contact type. This can be changed to Enable or Disable and NO (Normally Open) or NC (Normally Closed). This input is connected to a key contact that is used to bypass access control. Example of use: the maintenance service.
- Timemeter: Allows you to enable or disable the Timemeter input, changes the Timemeter input policy and contact type. This can be changed to "On CAN message", "On Use" or "On input" mode and to NO (Normally Open) or NC (Normally Closed). This entry is used to retrieve the timemeter activation information. If there is no timemeter, the use of the "On Use" mode allows to simulate this entry. The value then used will be the duration of GSE usage events (in use).
- FAMA provides a single entry to collect hour meter or GSE work information. In order to collect both information, one of them will have to be retrieved through the CAN bus or "On use" for the timemeter.

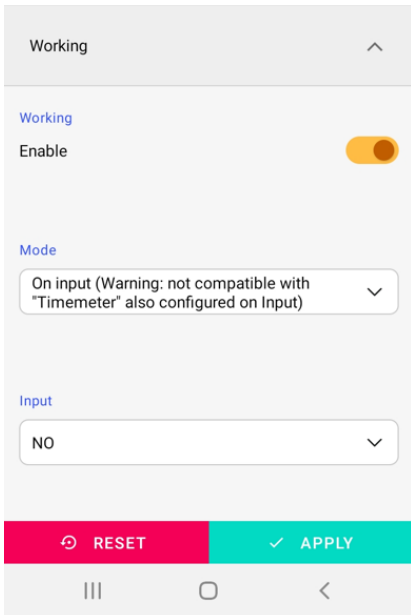


Figure 21: DIGITAL INPUTS 2/2

- Working: Allows you to enable or disable the Work entry, changes the policy of the Work entry and changes the contact type. This can be changed to "On CAN message" or "On input" mode and to NO (Normally Open) or NC (Normally Closed). In the case of a GSE performing a work operation, this entry is used to retrieve this information.

6.6 DATACAPTURE

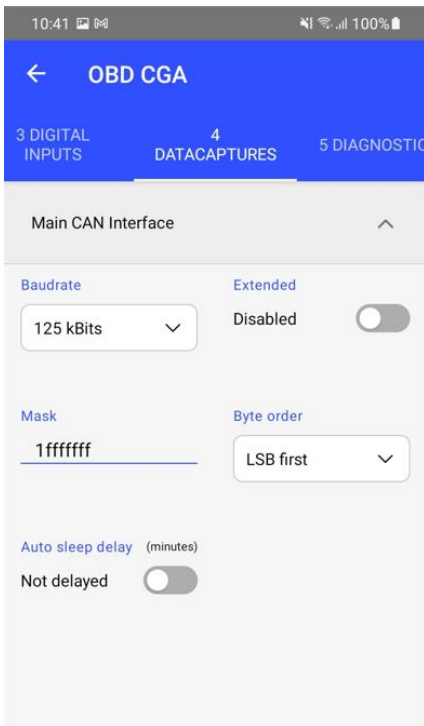
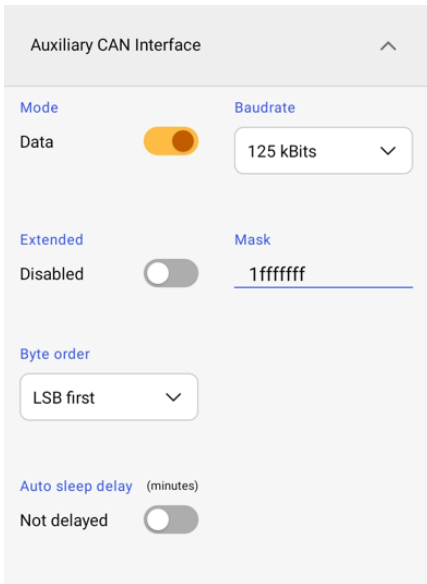


Figure 22: Main CAN Interface

Main CAN Interface:

- Baudrate: Configuration of the bit rate in serial links (corresponds to the number of bits transmitted per second).
- Extended: Use or not of the extended configuration of the ADC (e.g. J1939).
- Mask: Mask configuration applied to CAN ID.
- Byte order: The order in which bytes are received for multibyte values. LSB: the first byte received corresponds to the low-weight byte; MSB: The first byte received corresponds to the high weight byte.
- Auto sleep delay (seconds): Allows you to dissolve (or not) the FAMA sleep entry after receiving the last message on the bus. Standby may be delayed from 1 to 254 seconds maximum.



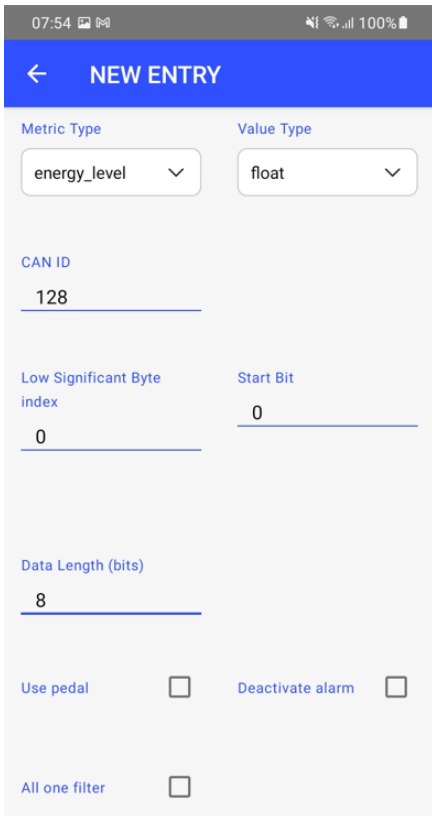
Auxiliary CAN Interface:

- Mode: Allows you to configure the auxiliary ADC mode in either Advееz or Data, this last parameter is used to retrieve the information from the GSE.

By enabling Data mode, the parameter fields are the same as the CAN configuration.

The Advееz mode is only used by Advееz.

Figure 23: Auxiliary CAN Interface



New CAN Rule Configuration:

- Metric type: Metric to be recorded. For example: energy_level, timemeter ...
- Value type: float.
- CAN ID: Corresponds to the number of the CAN ID to be captured in relation to the vehicle and the CAN protocol.
- Low Significant Byte index: Index de the byte where the data is located.
- Start Bit: Start bit where the data is located.
- Data Length (bits): The bit length of the data.
- Use pedal: Disabled. If on, the value will be captured only if the vehicle is in use, working or pedal input is activated.
- All one filter: Allows you to reject the frame if it has only 1s.
- Deactivate alarm: No alarms can be sent.

Figure 24: CAN Rule 1/2

Time to ignore (seconds) Periodic trigger

Period (seconds) Trigger Type

Trigger Range min

Range max Second order coeff (a)
($ax^2 + bx + c$)

First Order Coeff (b) Constant Coeff (c)
($ax^2 + bx + c$)

Alarm latency (seconds)

✓ APPLY

Figure 25: CAN Rule 2/2

- Time to ignore (seconds): Allows you to ignore the retrieved value for a chosen time.
- Periodic trigger: Will always send the data after the specified time in the period.
- Period (seconds): The period in which the value was sent.
- Trigger type: Alarm sent to Localeez when the value drops below the trigger (after being above it).
- Trigger: Threshold value for triggering (energy_level 40%).
- Min range: Minimum value of the captured data. If the data is out of range, it will be ignored.
- Max range: Maximum value of captured data. If the data is out of range, it will be ignored.
- Second order coeff (a); first order (b); constant (c) (ax^2+bx+c): Coefficients to be applied to the data captured in the CAN frame to transform it into a physical value.
- Alarm latency (seconds): The time taken to validate the alarm.

6.7 DIAGNOSTICS

The "DIAGNOSTICS" part is used to check the proper functioning of the different parts of the FAMA.

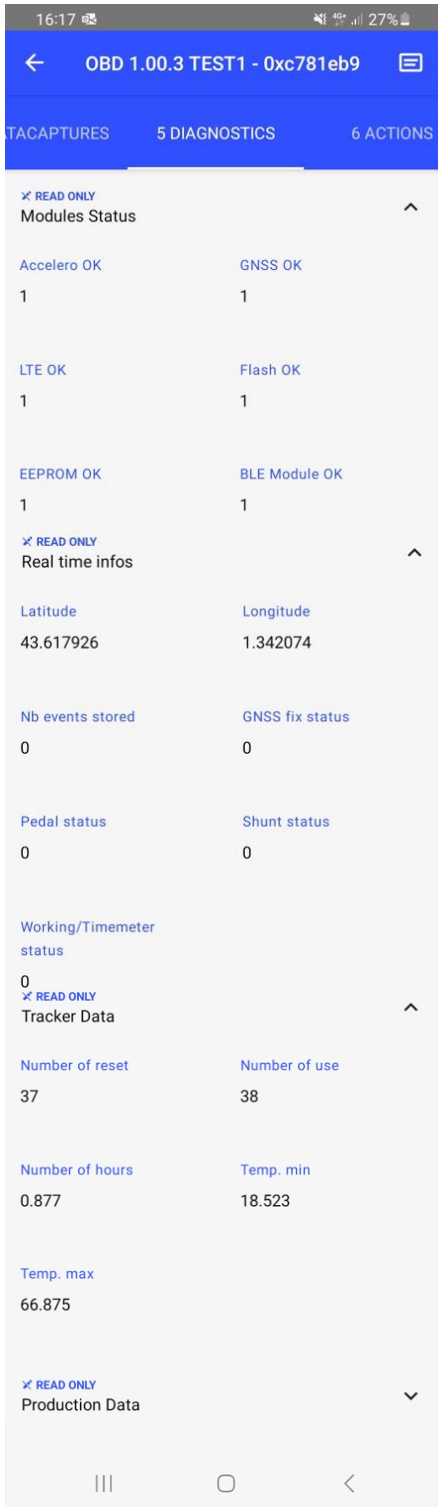


Figure 26: DIAGNOSTICS

Modules Status:

Allows you to visually check the proper functioning of the modules present in the system.

Real time info:

- Latitude and Longitude: Gives the GNSS position of the FAMA.
- GNSS fix status: Gives the status of the GNSS operation.

The "status" data is included in the "5 DIAGNOSTICS" section. It allows you to know visually if the input is activated and if it is in operation.

- 0: The input is enabled but not working.
- 1: The input is activated and is in operation.

Tracker data:

Allows you to visually check the evolution of the FAMA since its first connection on a GSE.

Production Data:

Calibration status: Gives the status of the production calibration.

7 Configuring and diagnosing Adveez equipment with LHC GSM

After installing equipment (FAMA) on a GSE, it can be configured with LHC GSM.

To configure/verify settings, follow the steps below.

All functions and settings are listed in this chapter, troubleshooting steps are also provided at the end of the document.

7.1 Add equipment

1. Go to your web browser and type in the search bar: <https://localeez.adveez.com>
2. Log in with your email address and password.
3. Click on "Log in".

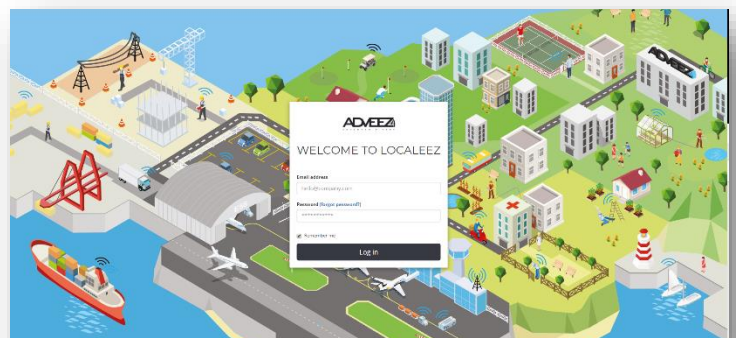
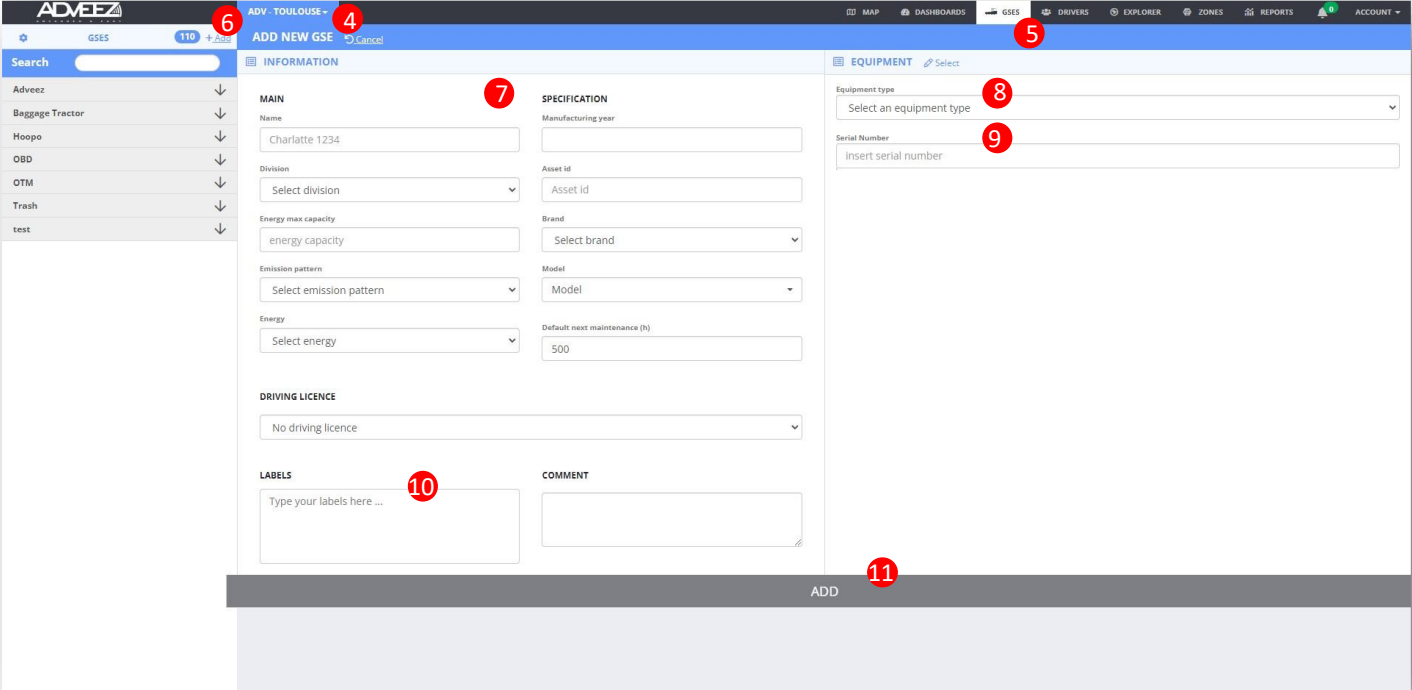


Figure 27: Localeez



The screenshot shows the 'ADD NEW GSE' form in the ADVEEZ application. The form is divided into several sections:

- MAIN:** Name (Charlotte 1234), Division (Select division), Energy max capacity (energy capacity), Emission pattern (Select emission pattern), Energy (Select energy).
- SPECIFICATION:** Manufacturing year, Asset id (Asset id), Brand (Select brand), Model (Model), Default next maintenance (h) (500).
- EQUIPMENT:** Equipment type (Select an equipment type), Serial Number (insert serial number).
- DRIVING LICENCE:** No driving licence.
- LABELS:** Type your labels here ...
- COMMENT:** (Empty text area)

Red circles with numbers 4 through 11 highlight key elements: 4 (ADD NEW GSE button), 5 (GSES tab), 6 (+ Add button), 7 (Name field), 8 (Equipment type dropdown), 9 (Serial Number field), 10 (Labels field), and 11 (ADD button at the bottom).


Figure 28: Localeez "Add GSE"

4. Select the installation site.
5. Click on the "GSES" tab.
6. Click on the "+ Add" button.
7. Enter the GSE information (name, division, make & model, energy, ...).
8. Select FAMA in "EQUIPMENT".
9. Enter the FAMA serial number (label affixed to the cover of the FAMA (e.g. 0xABCD1234)
10. Add users in the "DRIVERS" section.
11. Click on "ADD".


In order to check the communication, perform an action on the GSE/FAMA: shunt, pass a badge on the reader, movement, ...) and control that you receive the event associated with your action.

After performing these steps, a "Configure" button is available, click on it, a new window appears.

INFORMATION




FAMA Lite ( critical)

1258321530 (0x4b00767a)

Firmware revision: 1.12  Bootload




CONFIGURATION




Refresh

Access control   

Tag detection Disabled OSHA checklist Disabled

Authorization delay (seconds)

GNSS period use (seconds)   

Timemeter (hours)   




Mileage (km)   

Figure 29: Configure

The following steps detail all the settings.

7.2 INFORMATION

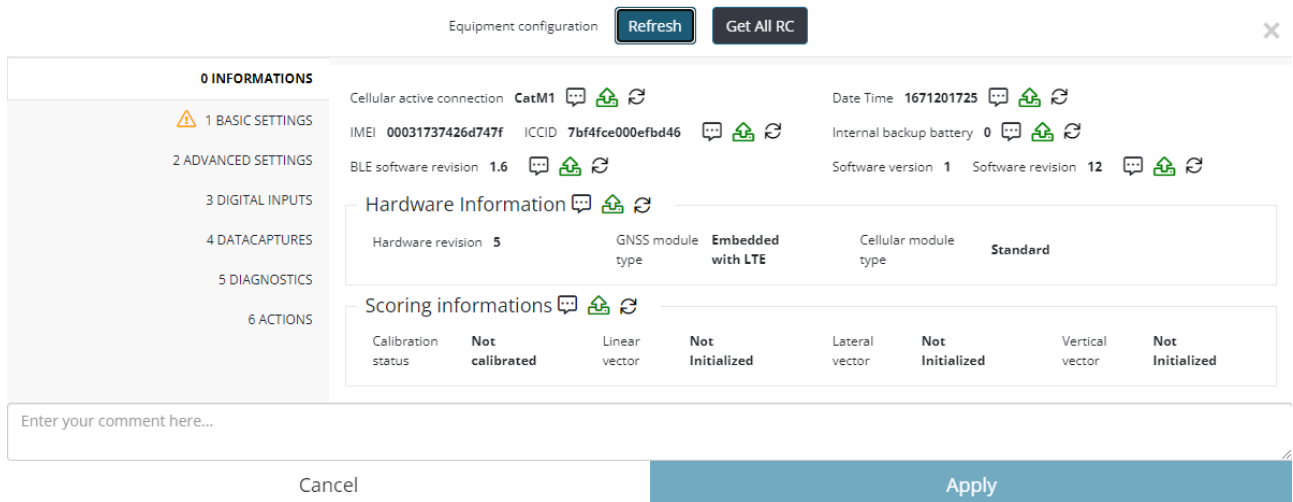


Figure 30: INFORMATION

- Cellular active connection: Allows you to know the status of the LTE connection.
- Date Time: Gives the date of FAMA.
- IMEI: Gives the physical number of the FMDM module of FAMA.
- ICCID: Gives the physical number of the SIM card inserted into the GSM module of the FAMA.
- Internal backup battery: Gives the charge level of the FAMA's internal battery (⚠ the true value is displayed only when the FAMA is not plugged into an external power source).
- BLE Software Revision: Gives the BLE module version.
- Version and Software Revision: Gives the version of the software.
- Hardware Revision: Gives the FAMA version of the electronic board.
- GNSS Module Type: Gives the type of GNSS module used.
- GSM module type: Gives the type of GSM module used.
- Calibration status: Allows you to know the status of the calibration.
- Linear, lateral, vertical vector: Allows you to know the configured axes.

7.3 BASICS SETTINGS

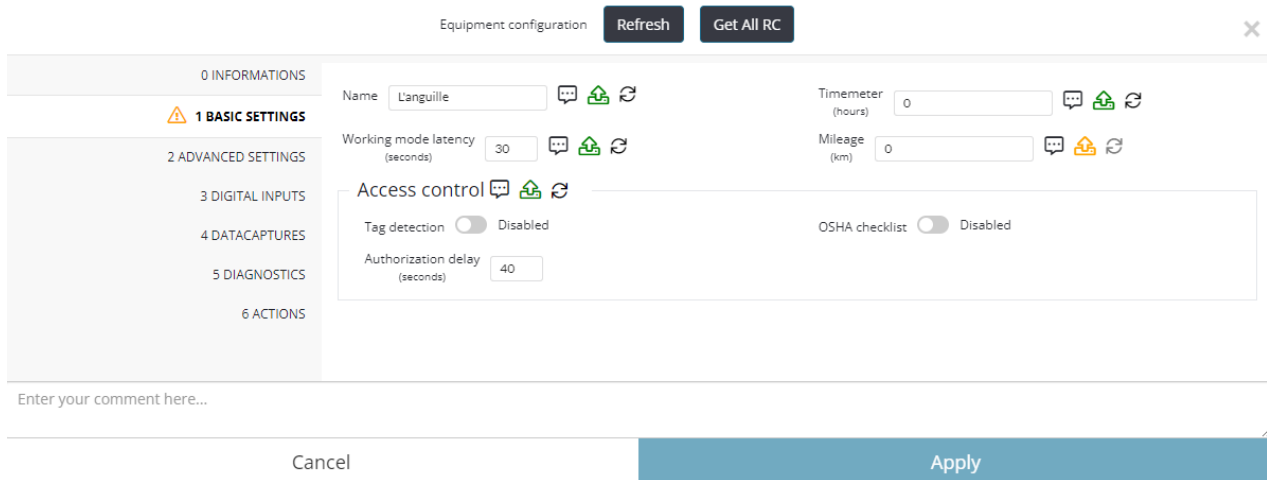


Figure 31: BASICS SETTINGS

- Name: Allows you to change the name of the FAMA. Usually, the name of the FAMA is the ID of the GSE.
- Timemeter (hours): Used to give FAMA the number of hours of the GSE hour meter.

⚠: The FAMA provides an input to collect hour meter information from the vehicle. This value increments from the moment a voltage is applied as a mechanical timestamp of a GSE. In this case, the FAMA may have a time lag depending on the vehicles and timestamps of different brands of the computer. We therefore recommend using the value provided by FAMA to have homogeneity on the vehicle fleet.
- Mileage (km): Used to give FAMA the number of kilometers of the GSE.

⚠: FAMA does not provide input to collect the vehicle mileage information. This value can be simulated or retrieved as CAN information. If simulated, it increments using FAMA's GNSS.
- Working mode latency (seconds): Allows you to add a timer (in seconds) before considering a working event closed. When a working event is stopped, the timer starts. If a new working event occurs during this delay, the previous event is restarted.
- Tag detection: Allows you to enable or disable access control for FAMA.
- OSHA Questionnaire: Allows you to enable or disable the OSHA questionnaire for FAMA.
- Authorization delay (seconds): Allows you to change the timeout (in seconds) of the release of the access control relay.

7.4 ADVANCED SETTINGS

Equipment configuration Refresh Get All RC ✕

0 INFORMATIONS

1 BASIC SETTINGS

2 ADVANCED SETTINGS

3 DIGITAL INPUTS

4 DATACAPTURES

5 DIAGNOSTICS

6 ACTIONS

Idle delay (minutes)

GNSS period use (seconds)

GNSS period standby (seconds)

Pedal latency before sleep (minutes)

Ask news period (minutes)

GNSS Constellation

GNSS fix timeout (seconds)

ASU mode Disabled

Mileage configuration

Mileage configuration Disable

Cellular Configurations

CATM1 Enabled NBIOT Enabled

APN name Server URL

Accelerometer

Activity threshold (mG) Activity confirmation time (seconds)

Inactivity threshold (mG) Inactivity confirmation time (seconds)

GNSS filters

HDOP PDOP

Strict HDOP Strict PDOP

Scoring thresholds

Acceleration threshold Brake threshold

Lateral threshold Vertical threshold

Enter your comment here...

Cancel
Apply

Figure 32: ADVANCED SETTINGS

- Idle delay (minutes): Allows you to configure how long the FAMA sends the inactivity information: the vehicle is "in use" but the GNSS position has not changed since the defined period.
- Ask new period (minutes): Configure the period for requesting notifications by FAMA to Localeez.
- GNSS period use (seconds): Allows you to configure the period at which the FAMA will send its position when it is "in use".
- GNSS period standby (seconds): Allows you to configure the period at which the FAMA will send its position when it is in standby.
- GNSS fix timeout (seconds): Configure the maximum waiting time for GNSS to set before sending information to Localeez.
- Pedal latency before sleep (minutes): Allows you to configure the period when the FAMA goes to sleep after the pedal is released or after turning off the ignition.
- ASU Mode: Allows you to set the FAMA in ASU mode. In this mode, the FAMA sends an alert if the vehicle moves while in use.

Cellular Configurations

- CATM1 Enabled: Enables or disables this type of communication. (Do not change these settings unless requested by support).
- NBIOT Enabled: Enables or disables this type of communication. (Do not change these settings unless requested by support).
- APN Name: Specifies the Name of the Access Point.
- Server URL: Allows you to modify the server receiving frames. (Do not change these settings unless requested by support).

Accelerometer

- Activity threshold (mG): Configure the acceleration threshold above which the FAMA is considered moving (Do not change these settings unless requested by the media).
- Activity confirmation time (seconds): Configure the minimum amount of time that the activity threshold must be crossed for the FAMA to be considered in motion (Do not change these settings unless requested by the media).
- Inactivity threshold (mG): Configure the acceleration threshold below which the FAMA is considered stationary (Do not change these settings unless requested by the media).
- Inactivity confirmation time (seconds): Configure the minimum amount of time the inactivity threshold must be crossed for the FAMA to be considered stationary (Do not change these settings unless requested by the media).

GNSS filters

- HDOP: Maximum quality of horizontal positioning (Horizontal Dilution of Precision) for considering GPS data in the case of periodic treatments (geofence, monitoring, ...). This parameter complements PDOP (see below). Both parameters must be valid for the position to be considered.
- PDOP: Maximum 3D positioning quality (Position Dilution Of Precision) for considering GNSS data in the case of periodic processing (geofence, monitoring, ...). This parameter complements HDOP (see above). Both parameters must be valid for the position to be considered.
- Strict HDOP: Maximum quality of horizontal positioning (Horizontal Dilution Of Precision) for considering GPS data in the case of punctual treatments (i.e. events). This parameter complements Strict PDOP (see below). Both parameters must be valid for the position to be considered.
- Strict PDOP: Quality of maximum 3D positioning (Position Dilution Of Precision) for considering GNSS data in the case of punctual treatments (i.e. events). This parameter complements Strict HDOP (see above). Both parameters must be valid for the position to be considered.

Scoring thresholds

- Acceleration threshold: Allows you to configure the acceleration threshold before the FAMA will not trigger an event. (Do not change these settings unless requested by support).
- Brake Threshold: Allows you to configure the hard braking threshold before the FAMA will not trigger an event. (Do not change these settings unless requested by support).
- Lateral threshold: Allows you to configure the sharp turn threshold before the FAMA will not trigger an event. (Do not change these settings unless requested by support).

- Vertical threshold: Allows you to configure the abrupt jump threshold before the FAMA will not trigger an event. (Do not change these settings unless requested by support).

7.5 DIGITAL INPUTS

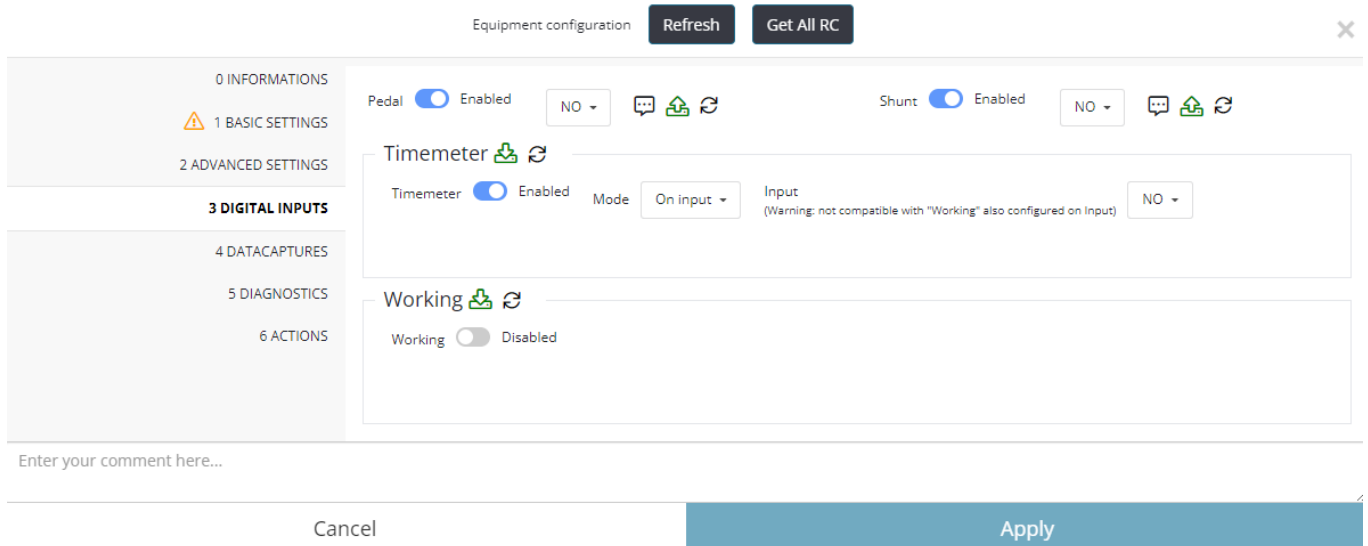


Figure 33: DIGITAL INPUTS

- Pedal: Allows you to activate or deactivate the Pedal input and change the type of contact. This can be changed to NO (Normally Open) or NC (Normally Closed). If access control is enabled, this makes it possible to initiate a badge detection and activate the relay of access control if the badge is authorized. Otherwise, the relay activates and the vehicle switches to "in use".
- Timemeter: Allows you to enable or disable the Timemeter entry and change the Timemeter input policy and contact type. This can be changed to "On CAN message", "On Use" or "On input" mode and to NO (Normally Open) or NC (Normally Closed). This entry is used to retrieve the timemeter activation information. If there is no timemeter, the use of the "On Use" mode allows to simulate this entry. The value then used will be the duration of GSE usage events (in use).

⚠: FAMA provides a single entry to collect hour meter or GSE work information. To collect both pieces of information, one of them will have to be retrieved either through the CAN bus or through the use state (Use) for the timestamp and the other thanks to the input provided by the FAMA.

- Working: Allows you to enable or disable the Working entry and change the policy of the Work entry and change the contact type. This can be changed to "On CAN message" or "On input" mode and to NO (Normally Open) or NC (Normally Closed). In the case of a GSE performing a work operation, this entry is used to retrieve this information.
- Shunt: Allows you to enable or disable the shunt input and changes the contact type. This can be changed to Disable or Enable and NO (Normally Open) or NC (Normally Closed). This input is connected to a key contact that is used to bypass access control. Example of use: the maintenance service.

7.6 DATACAPTURE

Equipment configuration
Refresh
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✕

0 INFORMATIONS

1 BASIC SETTINGS

2 **ADVANCED SETTINGS**

3 DIGITAL INPUTS

4 **DATACAPTURES**

5 DIAGNOSTICS

6 ACTIONS

Main CAN Interface

Baudrate: 125 kBits

Mask: 0x1ffffff

Auto sleep delay (minutes): Not delayed

Extended: Enabled

Byte order: LSB first

Auxiliary CAN Interface

Mode: Data

Extended: Enabled

Byte order: LSB first

Baudrate: 500 kBits

Mask: 0x1ffffff

Auto sleep delay (minutes): Not delayed

Main CAN Datacaptures - 0 elements

Metric Type	CAN ID	Low Significant Byte index	Start Bit	Data Length (bits)	Value Type	Last value seen	Status	Actions
+ Add								

Auxiliary CAN Datacaptures - 1 elements

Metric Type	CAN ID	Low Significant Byte index	Start Bit	Data Length (bits)	Value Type	Last value seen	Status	Actions
engine_speed	6	0	0	8	float			Edit Delete

Enter your comment here...
Cancel
Apply

Figure 34: DATACAPTURES

The "DATACAPTURE" part allows you to retrieve information in Can bus (J1939).

- Baudrate: Configuration of the bit rate in serial links (corresponds to the number of bits transmitted per second).
- Extended: Use or not of the extended configuration of the ADC (e.g. J1939).
- Mask: Mask configuration applied to CAN ID.
- Byte order: The order in which bytes are received for multibyte values. LSB: the first byte received corresponds to the low-weight byte; MSB: The first byte received corresponds to the high weight byte.
- Sleep delay (seconds): Allows you to disable (or not) the FAMA sleep entry after receiving the last message on the bus. Standby may be delayed from 1 to 254 seconds maximum.

Auxiliary CAN configuration

- Mode: Allows you to configure the auxiliary ADC mode in either Adviez or Data, this last parameter is used to retrieve the information from the GSE. By enabling Data mode, the parameter fields are the same as the CAN configuration. The Adviez mode is only used by Adviez.

Newrule:

Configuring a CAN Rule

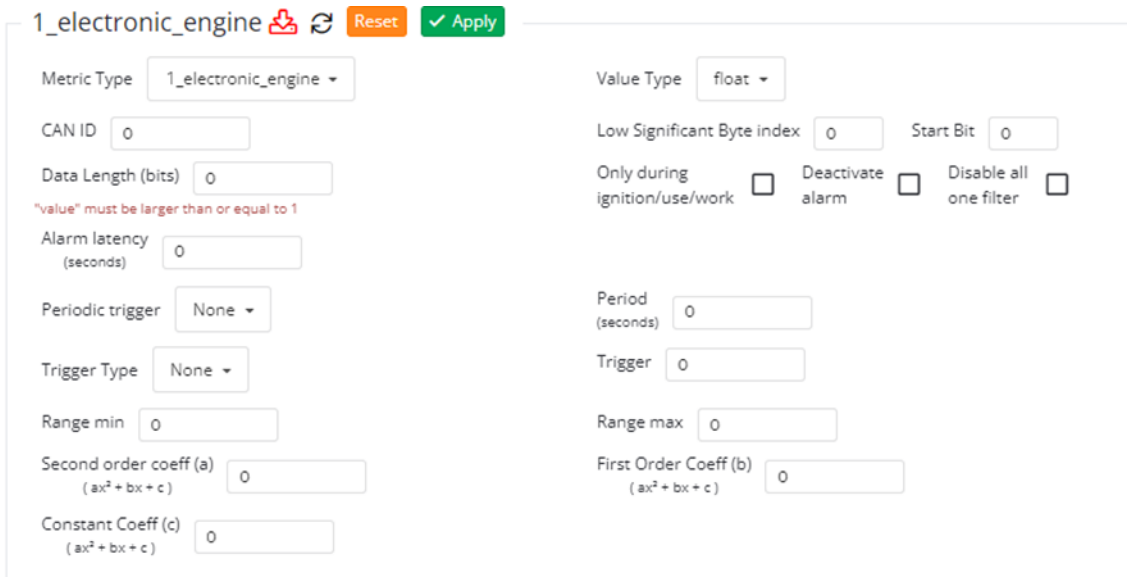


Figure 35: CAN

- Metric type: The metric to be recorded. For example: energy level, timemeter ...
Some metrics are displayed directly on the Localeez interface. Example: energy level, battery voltage...
- Value type: Floating (comma value) or raw (simple value).
- CAN ID: Corresponds to the number of the CAN ID to be captured in relation to the vehicle and the CAN protocol.
- Low Significant byte: Index de the byte where the data is located.
- Start bit: Start bit where the data is located.
- Data size (bits): Length in bit of the data.
- Pedal: The value will only be captured if the vehicle is in use, working or pedal input is activated.
- Disable alarm: No alarm notification is sent.
- Filter if all to 1: Allows you to reject the frame if it has only 1s.
- Period type: Will always send data after the specified time in the period.
- Period (seconds): The period in which the value is sent.
- Trigger type: Alarm sent to Localeez when the value crosses the trigger.
- Trigger value: Threshold value for trigger
- Min value: Minimum value of the captured data. If the data is out of range, it will be ignored.
- Max value: Maximum value of the captured data. If the data is out of range, it will be ignored.
- Second-order Coeff (a); first order (b); constant (c) (ax^2+bx+c): Coefficients to be applied to the data captured in the CAN frame to transform it into a physical value.

-
- Alarm delay (seconds): The time limit for validating the alarm.

Example of data capture for the energy level in CAN:

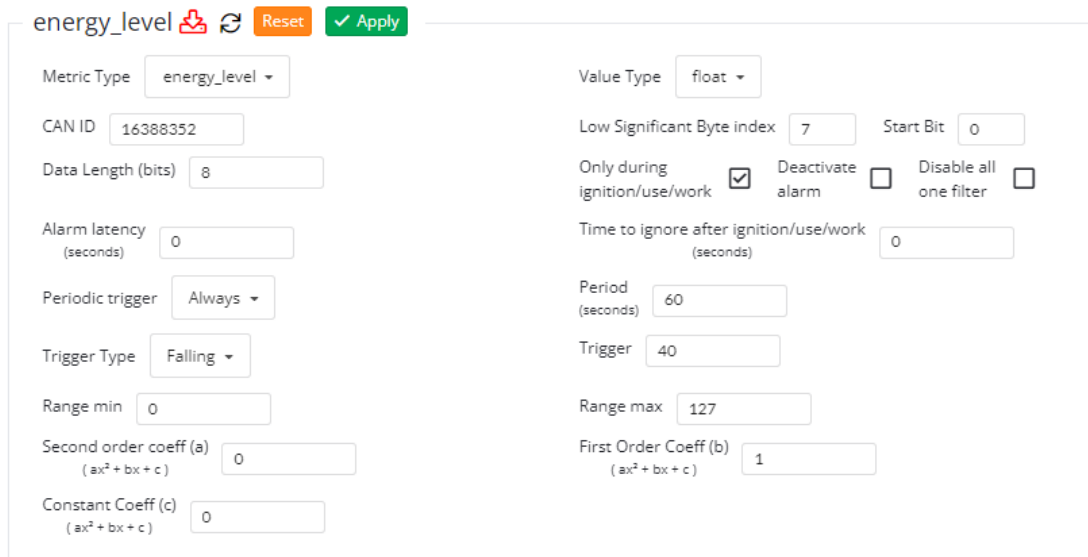


Figure 36: CAN Rule

- Metric type: Energy_level to record the vehicle's energy level.
- Value type: Floating.
- CAN ID: 16388352 is the CAN ID recorded for this vehicle.
- Low byte: The data to capture is at byte 7 of the CAN frame.
- Starting bit: The data to be captured starts at bit 0 of the first byte.
- Data size (bits): The length of the data to be captured is 8 bits.
- Pedal: Activated: the value will be captured only if the vehicle is in use, working or pedal input is activated.
- Period type: Will always send data after the specified time in the period.
- Period (seconds): 60
- Trigger type: Alarm sent to Localeez when the value falls below the trigger value (after being above it).
- Trigger value: 40 which corresponds to the triggering of an alarm when the battery will be below 40%.
- Min value: 0
- Max value: 127
- Second-order Coeff (a); first order (b); constant (c) (ax²+bx+c): a:0; b:1; c:0
- Alarm delay (seconds): Alarm validation time: 60

7.7 DIAGNOSTICS

Equipment configuration
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✕

0 INFORMATIONS

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Modules Status 🗨️ 📶 ↻

Accelero OK 1	GNSS OK 1	LTE OK 1	Flash OK 1
EEPROM OK 1	BLE Module OK 1		

Real time infos 🗨️ 📶 ↻

Latitude 43.617	Longitude 1.34	Nb events stored 0	GNSS fix status 0
Pedal status 1	Shunt status 0	Working/Timemeter status 0	

Tracker Data 🗨️ 📶 ↻

Number of reset 38	Number of use 24	Number of hours 6.094	Temp. min 14.978	Temp. max 60.428
--------------------	------------------	-----------------------	------------------	------------------

Production Data 🗨️ 📶 ↻

Calibration status **Not calibrated**

Enter your comment here...

Cancel
Apply

Figure 37: DIAGNOSTICS

The "DIAGNOSTICS" part is used to check the proper functioning of the different parts of the FAMA.

8 Quick Installation Guide

8.1 Connection



Figure 38: FAMA LITE Wiring

8.2 Configuration

1. Go to your web browser and type in the search bar: <https://localeez.adveez.com>
2. Log in with your email address and password Locale.
3. Click on "Log in".

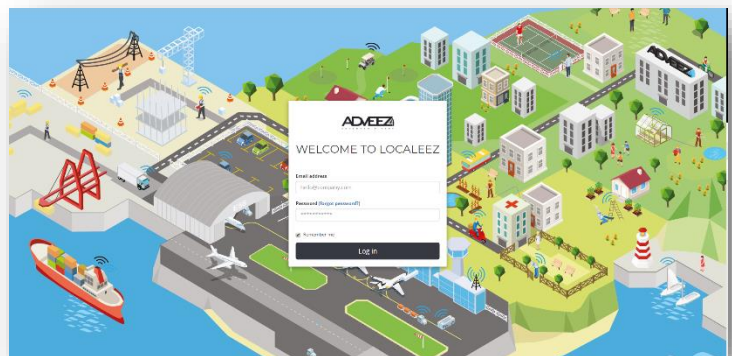


Figure 39: Localeez

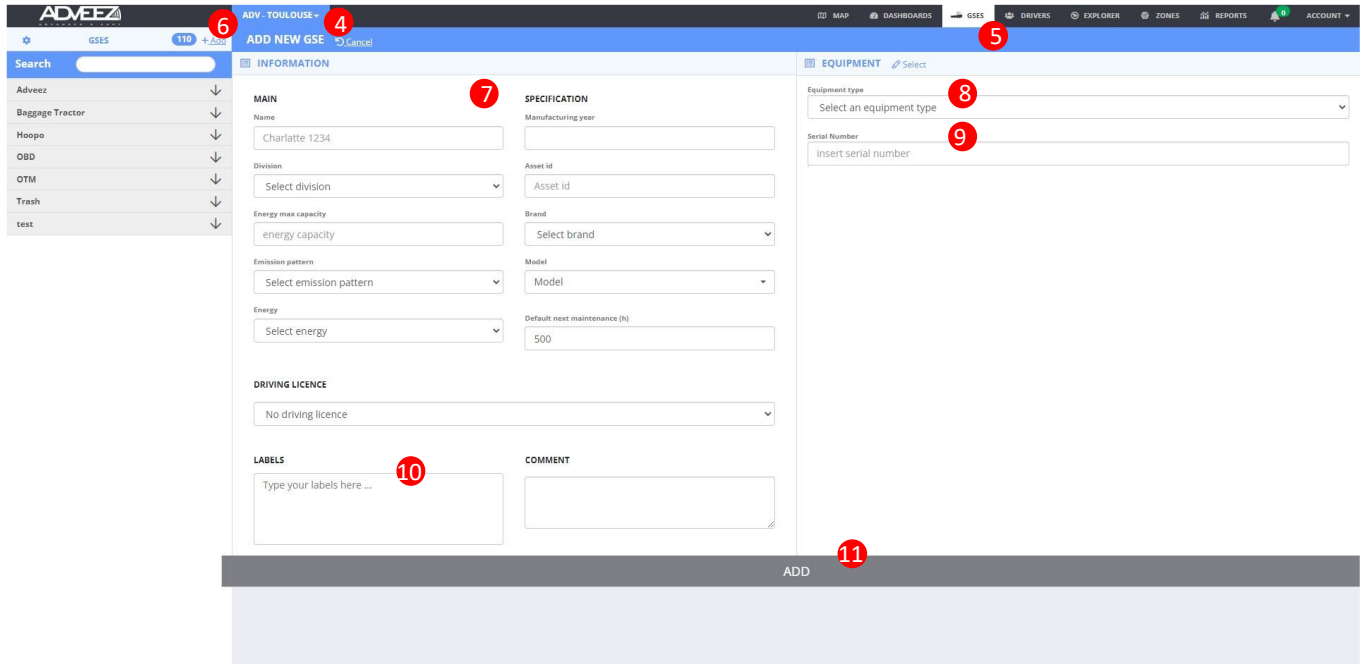


Figure 40: Localeez "ADD GSE"

4. Select the installation site.
5. Click on the "GSES" tab.
6. Click on the "+Add" button.
7. Enter the GSE information (name, division, make & model, energy, ...).
8. Select FAMA Lite in "EQUIPMENT".
9. Enter the FAMA serial number.
10. Add users in the "DRIVERS" section.
11. Click on "ADD".
12. Perform an action on the FAMA (shunt, movement, pass a badge on the reader, ...).
13. Check the escalation of the associated event.
14. Click on "Configure" in the "EQUIPMENT" section.
15. Click on the "1 BASIC SETTINGS" tab
16. Match the name of FAMA with the GSE.
17. Perform an action on the FAMA.

The FAMA is now installed and configured on Localeez (access control).

9 Contact

Technical support

Phone: +33(0)5 81 76 16 85
Email: support@adveez.com
Website: www.adveez.com
Helpdesk: helpdesk.adveez.com

10 Diagnostic

This chapter allows you to perform a diagnosis on the FAMA system according to several types of possible failures.

10.1 FAMA does not turn on

- 1- Check voltage between +bat and -bat
- 2- Start the vehicle.
- 3- Check if you see the vehicle with LHC Mobile
- 4- Put a main cable just with power + and power supply - without the other wires
- 5- Set a voltage between 9V and 80V
- 6- If the FAMA turns on check the wiring on the vehicle
- 7- If the FAMA does not turn on, contact ADVEEZ Support

10.2 GNSS/GSM problem

- 1- Check GNSS and GSM antenna cable
- 2- Physically check the antenna
- 3- Check GNSS status on Locale
- 4- Contact ADVEEZ Support

10.3 The vehicle can start without a badge (access control enabled)

- 1- Check if the bypass contact is not enabled
- 2- Check the connections on the vehicle at the starter
- 3- Remove the two contact wires from ADVEEZ access control (orange wires)
- 4- Without resetting the original beam try to start
 - a. If the vehicle starts, then a wiring change has been made to the vehicle, the vehicle should not start if the connections have not been restarted since the starter wires are cut.
 - b. Contact your maintenance department
- 5- If the vehicle does not start, check that there is no continuity between the two orange wires
- 6- Disconnect the main cable from the FAMA and reconnect the two orange cables to the starter contacts
 - a. If the vehicle starts, then the shunt cable or main cable is damaged
- 7- If the vehicle does not start, connect the main FAMA cable and retest
- 8- Contact ADVEEZ Support

10.4 The vehicle does not start

- 1- Shunter the vehicle
 - a. If the vehicle still does not start, reconnect the starter wires
 - b. If the vehicle still does not start, check the bypass wires and contact maintenance
- 2- If the vehicle starts, check the status of the Pedal on Localeez.
- 3- Pass the badge
 - a. If not detected, check the wiring of the drive (and refer to [Chapter 2.3](#))
 - b. If the wiring is good, check that a color change occurs when driving and a beep sounds. Contact ADVEEZ support if this is not the case
 - c. Check that your badge is associated with this vehicle.
- 4- Check that the relay closes between the two orange wires
- 5- Test again if the problem persists contact ADVEEZ support

10.5 Event issue on Localeez

- 1- Check the operation of the vehicle with the FAMA
- 2- Checking GNSS/GSM ([Chapter 2](#))
- 3- Check date on Localeez
- 4- Check the FAMA version
- 5- Check if events are in the memory of FAMA
- 6- Contact ADVEEZ

10.6 Problem on Mifare reader

- 1- Check that the reader is turned off when there is no contact
- 2- Check that the reader lights up when the ignition is present (check on LHC Mobile that the Pedal input is active in "DIAGNOSTICS")
 - a. Otherwise check the wiring
 - b. Check that the connector is connected to the FAMA
 - c. Check the voltage on the wires of the reader
 - d. Change HID reader
- 3- Pass a badge
 - a. If nothing happens check the wiring on the reader
 - b. Check that the connector is connected to the FAMA
 - c. Check the voltage on the wires of the reader
 - d. Change HID reader
- 4- If the LEDs flash 5 times and a buzzer sounds, check on Localeez that the badge is accredited on this vehicle.
- 5- If the LEDs only flash once, check the wiring
- 6- Contact Adveez Support

10.7 Problem on an input (pedal, working, ...)

- 1- Check that the input is working properly on the vehicle
- 2- Check the voltage at the terminals of the desired input (e.g. between pedal + and pedal -)
- 3- Check on LHC Mobile that the input is activated in the "DIAGNOSTICS" part
- 4- Check that the entrance is not broken by putting another entrance in its place
- 5- Contact ADVEEZ Support

11 Battery information

Caution: Risk of explosion if the battery is replaced with an incorrect battery type. Dispose of used batteries according to the instructions.



This symbol indicates that caution should be exercised where the symbol is placed and that the current situation requires the operator to be aware or to take action to avoid undesirable consequences.



Instructions must be read before use.



The used product cannot be disposed of in a traditional garbage can. It must be routed to a specific collection point.



12 Warning to users in the United States

Federal Communication Commission Interference Statement 47 CFR Section 15.105(b)

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 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.

This FAMA Lite 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.

NO UNAUTHORIZED MODIFICATIONS

47 CFR Section 15.21

CAUTION: This equipment may not be modified, altered, or changed in any way without signed written permission from ADVEEZ. Unauthorized modification may void the equipment authorization from the FCC and will void the ADVEEZ warranty.

This device complies with FCC RF radiation exposure limits set forth for the general population (uncontrolled exposure). This device must be installed to provide a separation distance of at least 20cm from all persons and must not be collocating or operating in conjunction with any other antenna or transmitter.

12.1 Inner LTE/GNSS module RF exposure

This equipment must be installed and operated in accordance with provided instructions¹ and the antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be collocated 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.

12.2 Inner BLE module RF exposure

The product complies with the US portable RF exposure limit set forth for an uncontrolled environment and are safe for intended operation as described in this manual². The further RF exposure reduction can be achieved if the product can be kept as far as possible from the user body or set the device to lower output power if such function is available. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

13 Warning to users in the Canada

This device complies with Industry Canada licence-exempt RSS standard(s). 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.

¹ User manual provided for FCC certification: <https://fcc.report/FCC-ID/2AJYU-SIM7000G/4050993>

² User manual provided for FCC certification: <https://fcc.report/FCC-ID/SQGBL651/3980161>

Under Industry Canada regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by Industry Canada.

To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that necessary for successful communication.

This device complies with Industry Canada RF radiation exposure limits set forth for general population (uncontrolled exposure). This device must be installed to provide a separation distance of at least 20cm from all persons and must not be collocated or operating in conjunction with any other antenna or transmitter.

This device has been designed to operate with the antenna(s) listed below and having a maximum gain of 2.5dBi (LTE). Antennas not included in this list or having a gain greater than 2.5dBi (LTE) are strictly prohibited for use with this device. The required antenna impedance is 50 ohms.

List of acceptable antenna(s):

- *JCB046L (GPS+LTE Combination Antenna)*
- *JCB305L (GPS+LTE Combination Antenna)*