GV355CEU User Manual

GSM/GPRS/LTE CAT1/GNSS Tracker

TRACGV355CEUUM006

Version: 1.06

Driving Smarter IoT

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Document Title	GV355CEU User Manual
Version	1.06
Date	2025-02-21
Status	Release
Document Control ID	TRACGV355CEUUM006

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0. Revision History

Version	Date	Author	Description of Change
1.00	2022-08-24	Willie Liu	1. Initial.
1.01	2023-02-28	Willie Liu	1. Added description of 120Ω user cable installation.
1.02	2023-07-14	Forrest Cao	1. Added note for using 1-WIRE.
1.03	2024-02-23	Willie Liu	1. Added the wiring scheme.
1.04	2024-03-06	Willie Liu	1. Added chapter 5.
1.05	2024-05-23	Willie Liu	1. Modified the terms and abbreviations in chapter 1.2.
1.06	2025-02-21	Rita Pan	1. Modified wiring scheme.

1. Introduction

The GV355CEU is a compact GNSS tracker designed for a wide variety of vehicle tracking applications. It has multiple I/O interfaces that can be used for monitoring or controlling external devices. Its built-in GNSS receiver has superior sensitivity and fast time to first fix. Its six-band LTE-FDD in Europe and GSM/GPRS 850/900/1800/1900 MHz allowing the GV355CEU's location to be monitored in real time or periodically tracked by a backend server and mobile devices. Its built-in 3-axis accelerometer allows driving behaviour monitoring, motion detection and extended battery life through sophisticated power management algorithms. It also has built-in CAN Module. System integration is straightforward as complete documentation is provided for the full featured @Track protocol. The @Track protocol supports a wide variety of reports including emergency, geo-fence boundary crossings, driving behaviour, low battery and scheduled GNSS position.

1.1. Reference

Table 1. GV355CEU Protocol Reference

SN	Document Name	Remark
[1]	GV355CEU @Track Air Interface Protocol	The air protocol interface between GV355CEU and backend server.

1.2. Terms and Abbreviations

Table 2. Terms and Abbreviations

Abbreviation	Description
AIN	Analog Input
IGN	Ignition input, positive trigger
/IN	Digital input, negative trigger
DATA-1W	Data for one wire
VDD-1W	VDD for one wire
PWR	External DC power input
OUT	Digital Output
GND	Power and digital ground
RXD	Receive Data
TXD	Transmit Data
K-LINE	Data for K-LINE
485A	RS485 positive
485B	RS485 negative

2. Product Overview

2.1. Check Parts List

Before starting, check whether all the following items have been included with your GV355CEU. If anything is missing, please contact the supplier.

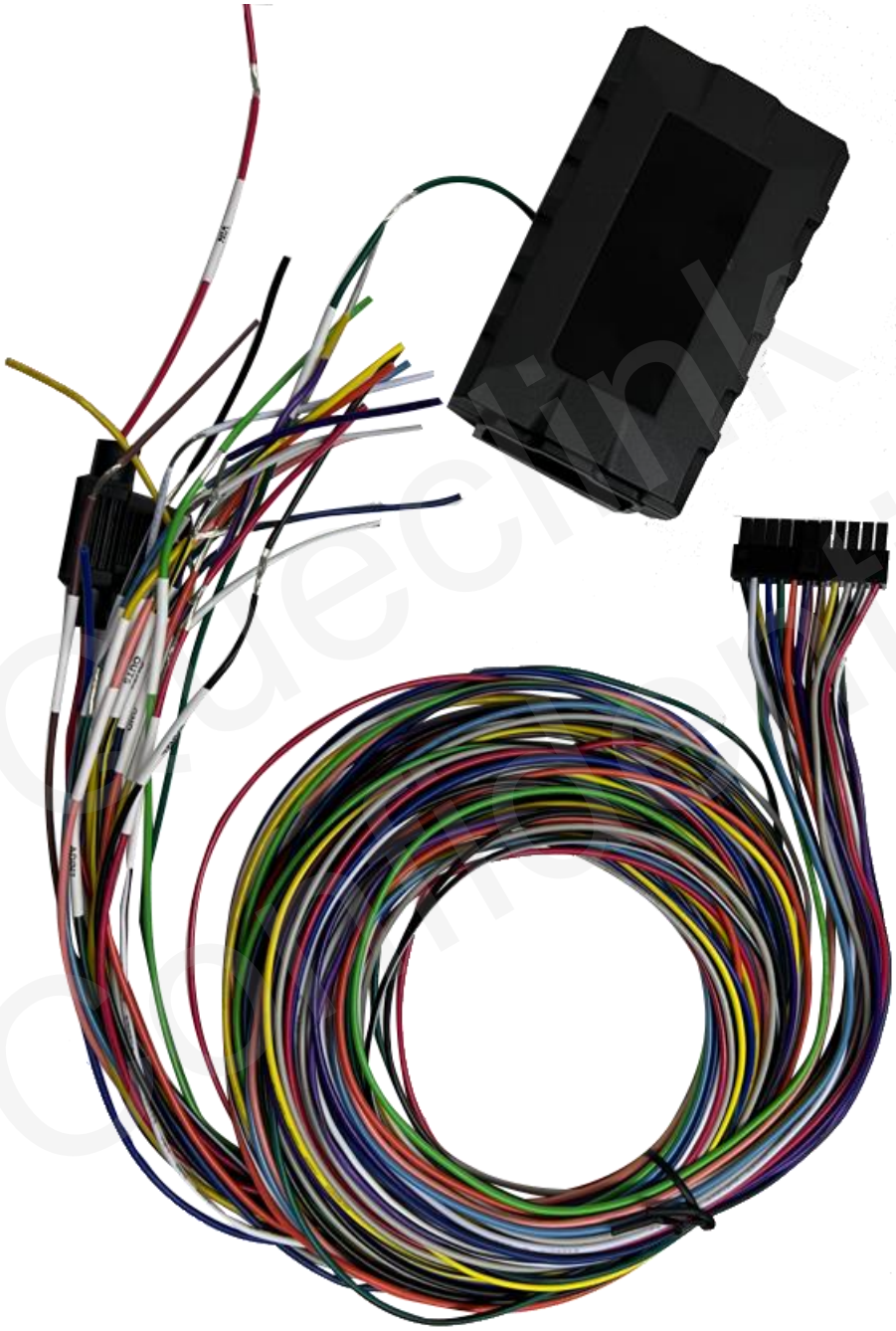
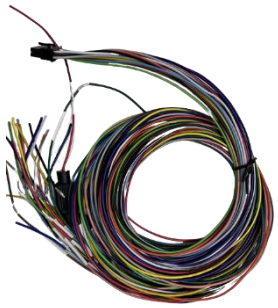


Figure 1. Appearance of GV355CEU

2.2. Parts List

Table 3. Parts List

Name	Picture
GV355CEU Locator	94*58.5*21 mm
User Cable	
DATA_CABLE_W (Optional)	
Power Protection Cable_Kit (Optional)	

2.3. Interface Definition

The GV355CEU has a 22 PIN interface connector which contains the connections for power, I/O, RS232, etc. The sequence and definition of the 22-PIN connector are shown in the following figure:

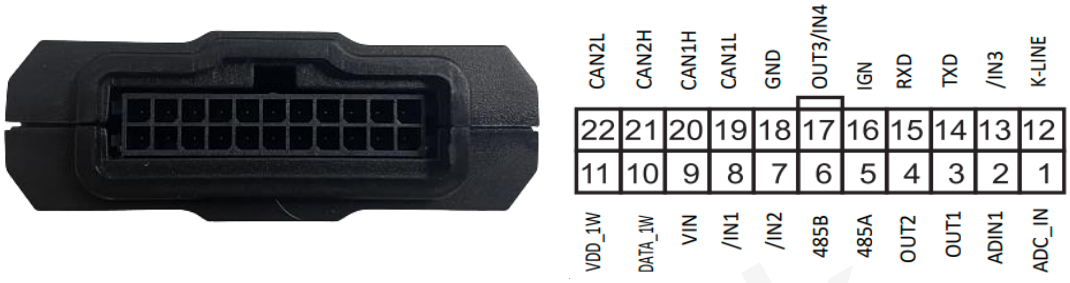
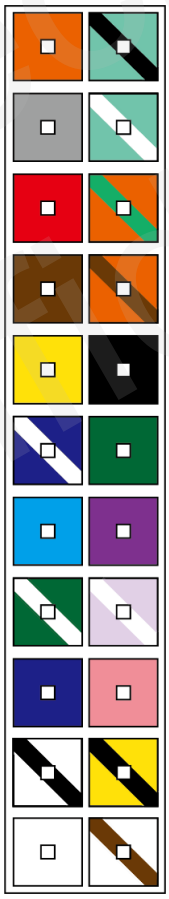
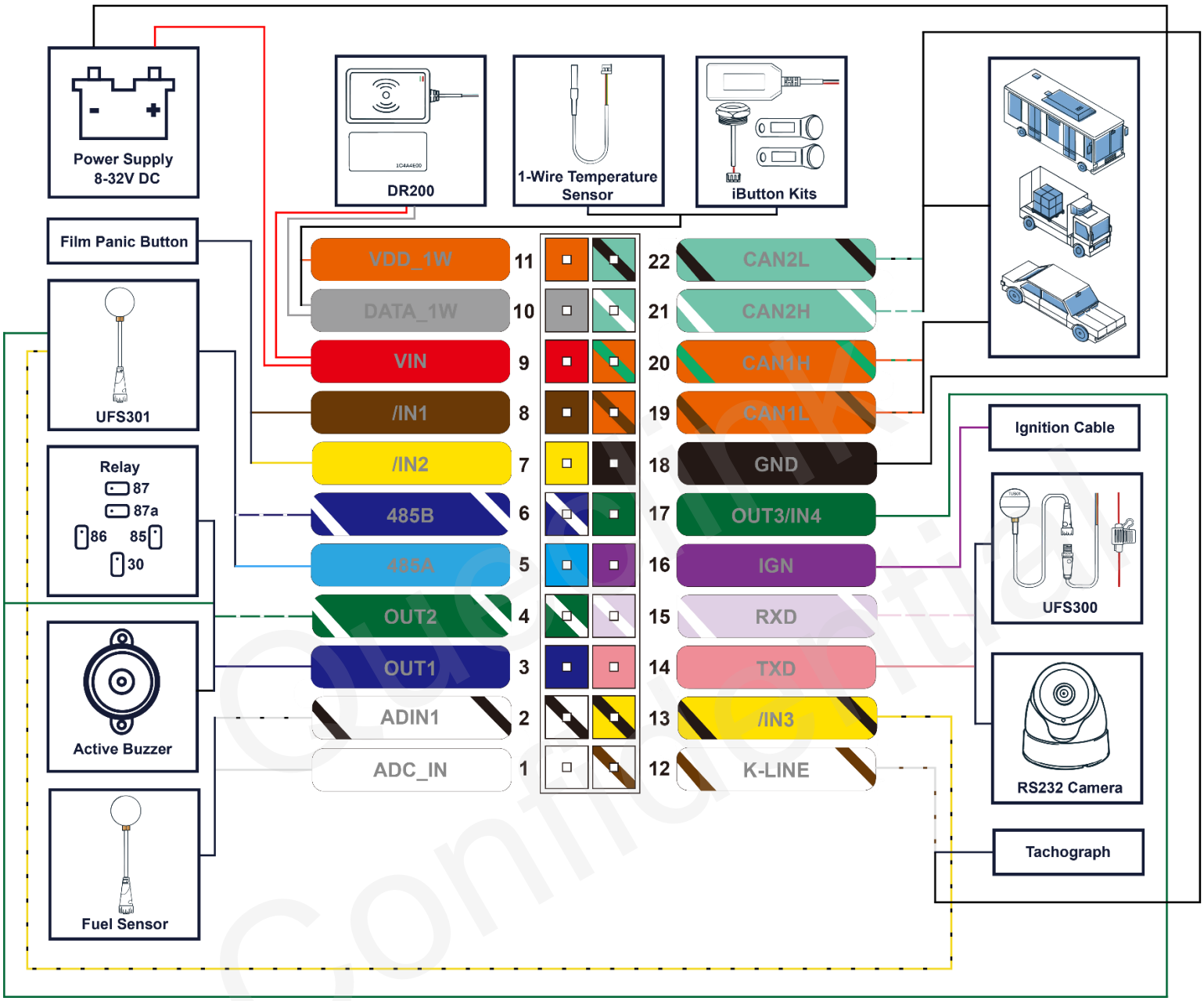


Figure 2. 22 PIN Connector on GV355CEU

Table 4. Description of 22 PIN Connection

Description	PIN Name	PIN No	Cable	PIN No	PIN Name	Description
VDD for one wire	VDD_1W	11		22	CAN2L	CAN 2 negative
Data for one wire	DATA_1W	10		21	CAN2H	CAN 2 positive
External DC power input, 8-32V	VIN	9		20	CAN1H	CAN 1 positive
Digital input, negative trigger	/IN1	8		19	CAN1L	CAN 1 negative
Digital input, negative trigger	/IN2	7		18	GND	Power and digital ground
RS485 negative	485B	6		17	OUT3/IN4	Digital output/Digital input, Negative trigger
RS485 positive	485A	5		16	IGN	Ignition input, positive trigger
Digital output	OUT2	4		15	RXD	UART RXD, RS232
Digital output, Open drain, 150 mA max, with latch circuit	OUT1	3		14	TXD	UART TXD, RS232
Analog input (0-16V)	ADIN1	2		13	/IN3	Digital input, Negative trigger
Analog input (0-30V)	ADC_IN	1		12	K-LINE	Data for k-line

2.4. Wiring Scheme



3. Get Started

3.1. Open the Case

Figure 3. Open the Case

Remove the screws on the four corners with the screwdriver to open the device.

3.2. Close the Case

Figure 4. Close the Case

Tighten the screws on the four corners with the screwdriver to close the device.

3.3. Install a SIM Card

Open the case and ensure the unit is not powered. Slide the holder right to open the SIM card holder. Insert the SIM card into the holder as shown below with the gold-colored contact area facing down. Take care to align the cut mark. Close the SIM card holder. Close the case.

Figure 5. SIM Card Installation

3.4. Install the Internal Backup Battery

Figure 6. Backup Battery Installation

GV355CEU has an internal backup Li-ion battery.

3.5. Power Connection

PWR (PIN9)/GND (PIN18) are the power input pins. The input voltage range for this device is from 8V to 32V. The device is designed to be installed in common vehicles that operate on 12V or 24V systems without the need for external transformers. But it is recommended to use Power Protection Cable Kit if it is installed in a truck with 24V battery.

Figure 7. Typical Power Connection

3.6. Power On

Please pay attention to the following situations when powering on the device:

1. Backup battery is connected to the device:

- The device can be powered on when the USB cable is connected.
- The device can be powered on when the external power supply is connected.

2. Backup battery is not connected to the device:

- The device cannot be powered on when the USB cable is connected only.
- The device can be powered on when the external power supply is connected only.

3.7. Ignition Detection

Table 5. Electrical Characteristics of Ignition Detection

Logical Status	Electrical Characteristics
Active	5.0V to 32V
Inactive	0V to 3V or open

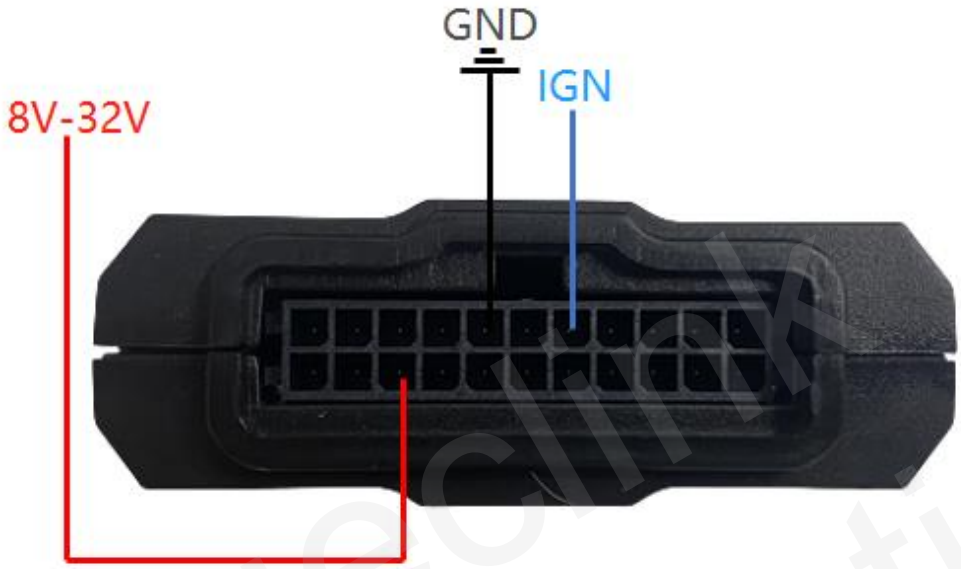


Figure 8. Typical Ignition Detection

IGN (PIN16) is used for ignition detection. It is strongly recommended to connect this pin to ignition key “RUN” position as shown above.

An alternative to connecting to the ignition switch is to find a non-permanent power source that is only available when the vehicle is running, for example, the power source for the FM radio.

IGN signal can be configured to start transmitting information to the backend server when ignition is on, and enter the power saving mode when ignition is off.

3.8. Digital Inputs

There are four general purpose digital inputs on GV355CEU. They are all negative triggers.

Note: Input3 and Output4 are multiplexed.

Table 6. Electrical Characteristics of Digital Inputs

Logical Status	Electrical Characteristics
Active	0V to 0.6V
Inactive	Open

The following figure shows the recommended connection of a digital input.

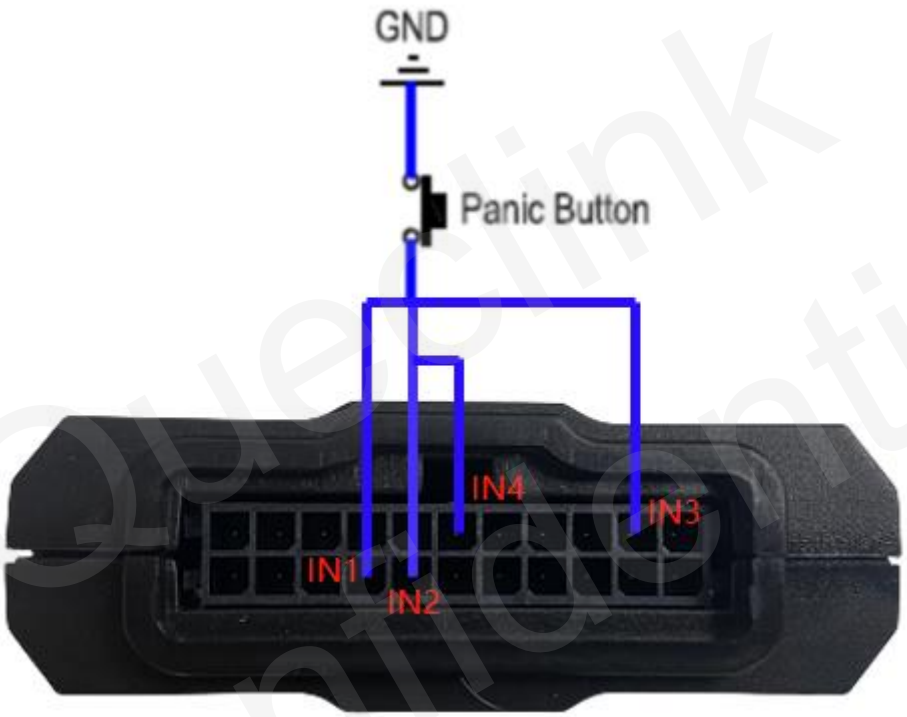


Figure 9. Typical Digital Input Connection

3.9. Analog Inputs

There are two analog inputs on GV355CEU, and the analog input voltage ranges are 0-16V and 0-30V. The following figure shows the recommended connection.

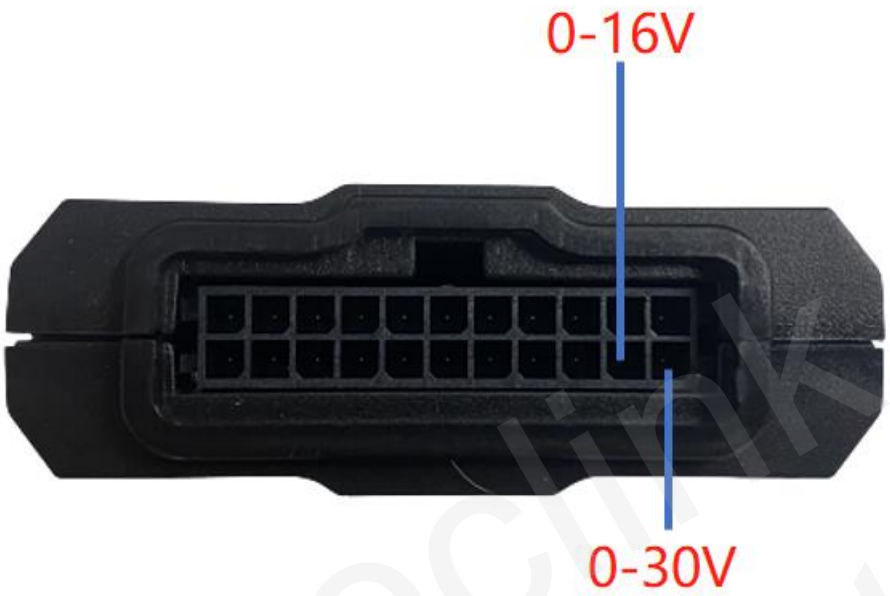


Figure 10. Typical Analog Input Connection

Note:

1. For PIN2, the voltage range is 0-16V.
2. For PIN 1, the voltage range is 0-30V.

3.10. Digital Outputs

There are three digital outputs on GV355CEU. All three digital outputs are of open drain type and the maximum drain current is 150mA. Each output has the built-in over current PTC resettable fuse.

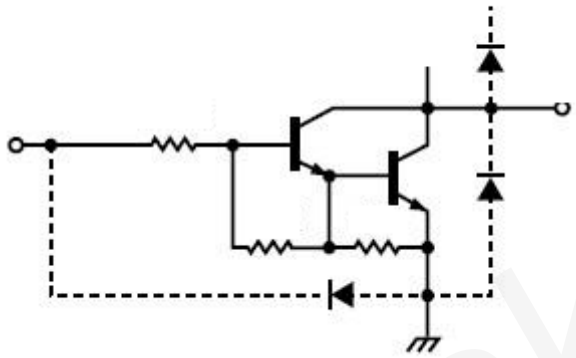


Figure 11. Digital Output Internal Drive Circuit

Table 7. Electrical Characteristics of Digital Outputs

Logical Status	Electrical Characteristics
Enable	<1.5V @150 mA
Disable	Open drain

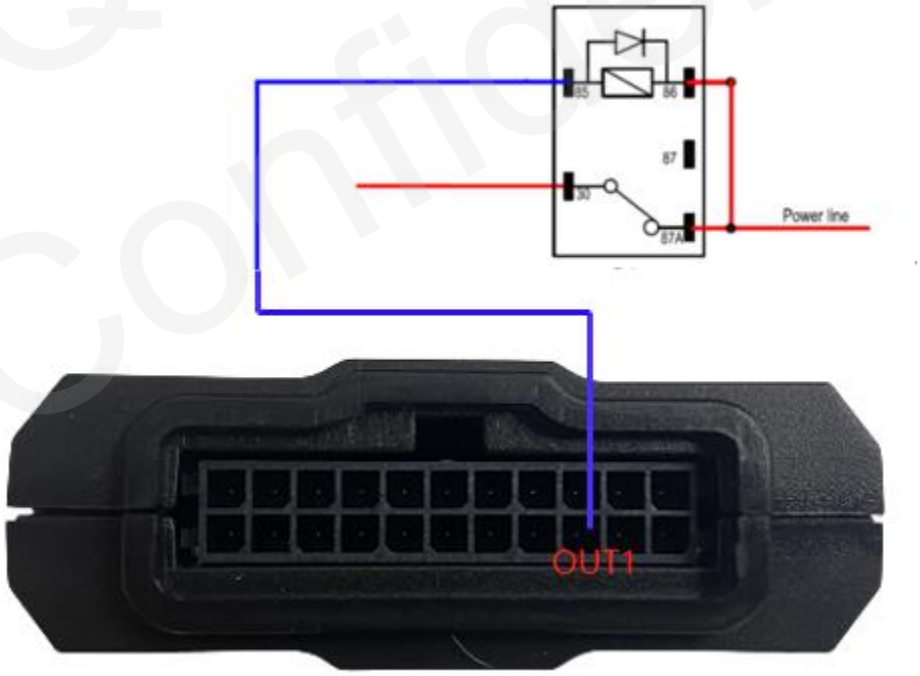


Figure 12. Typical Connection with Relay

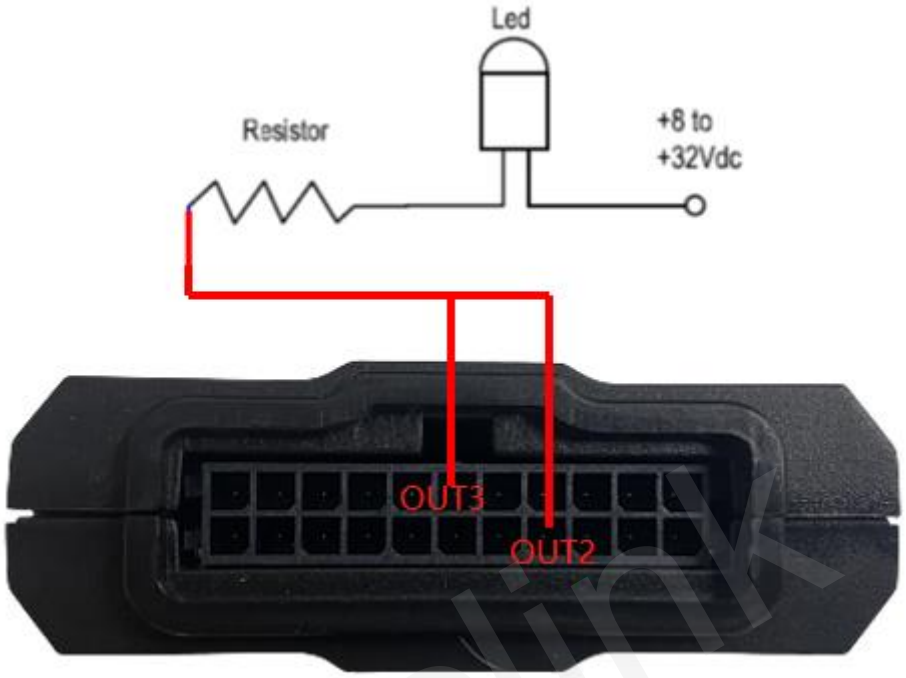


Figure 13. Typical Connection with LED

Note:

1. OUT1 will latch the output state during reset.
2. Many modern relays come with a flyback diode pre-installed internal to the relay itself. If the relay has this diode, please ensure the relay polarity is properly connected. If this diode is not internal, it should be added externally. A common diode such as a 1N4004 will work in most circumstances.
3. Output4 and Input3 are multiplexed.

3.11. Device Status LED

Figure 14. GV355CEU LED on the Case

Table 8. Definition of Device Status and LED

LED	Device Status	LED Status
CAN	Operating mode, CAN-BUS or J1708 active (only one of those)	The green LED blinks once every second.
	Operating mode, two buses active (2 CAN-buses, or CAN-bus and J1708, or CAN-bus and D8)	The green LED blinks twice every second.
	Operating mode, three buses active (2 CAN-buses and D8)	The green LED blinks thrice every second.
	Operating mode, CAN-BUS(es) and J1708 sleep or disabled	The green LED blinks once every 4 seconds.
	Low power mode (sleep)	OFF
	CAN-BUS codes synchronization	The red LED blinks quickly (ca.7times per second).
	CAN-BUS codes synchronization finished successfully.	Green ON (after synchronization)
	CAN-BUS codes synchronization failed (CAN-BUS wires are properly connected, but codes have not been recognized).	Red ON (after synchronization)
	CAN-BUS codes synchronization failed (no CAN-BUS connection or CAN-BUS sleep).	The red LED blinks 0.5s. The green LED blinks 0.5s.
	Invalid configuration (e.g. vehicle not synchronized)	The red LED blinks once every 2 seconds.
	The device failed to power on. Return the device to the producer for analysis.	Red ON (after power-on)
GNSS	GNSS chip is powered off.	OFF
	GNSS sends no data or data format error occurs.	Slow flashing

	GNSS chip is searching GNSS information.	Fast flashing
	GNSS chip has gotten GNSS information.	ON
CEL	The device is searching network.	Fast flashing
	The device has been registered on the network.	Slow flashing
	The SIM card needs pin code to unlock.	ON
PWR	No external power and internal battery voltage is lower than 3.6V.	OFF
	No external power and internal battery voltage is lower than 3.7V.	Slow flashing
	The external power supply has been connected to the device and the internal battery of the device is charging.	Fast flashing
	The external power supply has been connected to the device and the internal battery of the device is fully charged.	ON

Note:

1. CEL LED, GNSS LED and PWR LED lights can be configured to be turned off after a period time by using the configuration tool.
2. Fast flashing: For CEL LED, it is about 60 Ms ON/780 Ms OFF. For GNSS LED and PWR LED, it is about 100 Ms ON/100 Ms OFF.
3. Slow flashing: For CEL LED, it is about 60 Ms ON/1940 Ms OFF. For GNSS LED and PWR LED, it is about 600 Ms ON/600 Ms OFF.

3.12. Serial Port/UART Interface

There are two lines dedicated to the Serial Port/UART interface (TXD and RXD). TXD and RXD are standard RS232 signals.

RS485A and RS485B lines are used to connect to the interface 485.

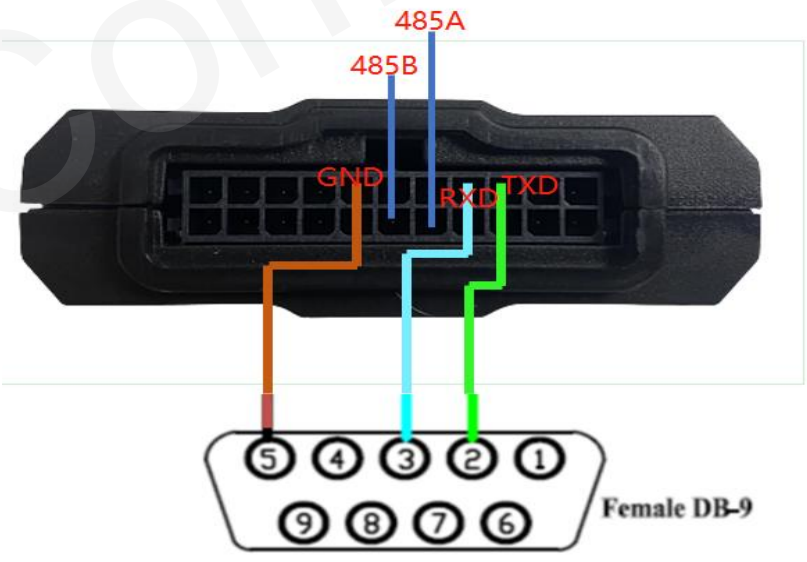


Figure 15. Typical Connection with RS232 Port

3.13. 1-WIRE Interface

There are two lines dedicated to the 1-WIRE, one is VDD-1-WIRE and the other is DATA-1-WIRE. The following diagram shows the recommended connection of 1-wire device.

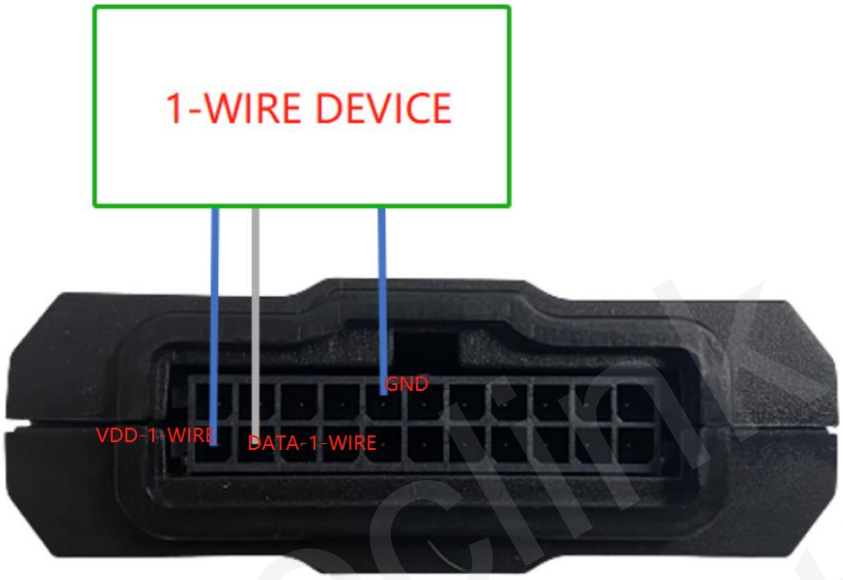


Figure 16. 1-WIRE Interface

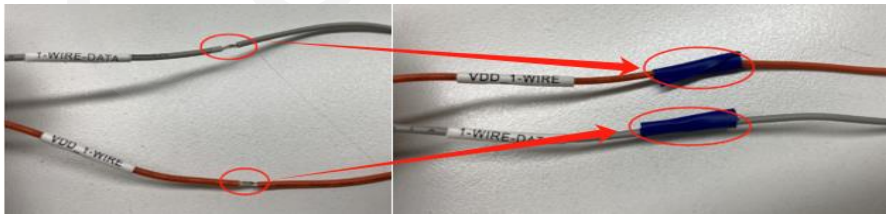
Note:

1. **Before connecting and removing accessories, please power off the device first.**

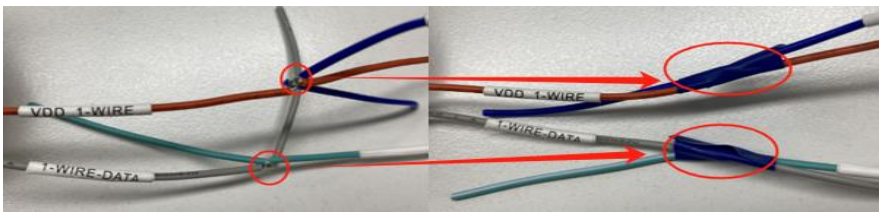
2.Please keep the voltage on the VDD-1-WIRE and DATA-1-WIRE to **no more than 5.5V** when using 1-WIRE.

3.Avoid shorting VIN (or high voltage signal line), GND and VDD_1_WIRE/DATA signal line, which may damage the 1-WIRE chip and cause device abnormality.

4.Without using ONE-WIRE function, please wrap the VDD_1_WIRE/DATA signal line with insulating tape to avoid contacting with other high voltage signal lines or GND.



5.When using ONE-WIRE, please wrap the VDD_1_WIRE/DATA connection with insulating tape.



3.14. Motion Sensor Direction

GV355CEU has an internal 6-axis gyroscope sensor supporting driving behavior monitoring, crash detection and motion detection. The following shows the directions of the motion sensor:

Figure 17. Motion Sensor Direction

Note:

1. The opposite direction of the cable harness is the positive direction of the X-axis.
2. The Z-axis is in positive direction above the label surface.
3. The positive directions of the three axes are perpendicular to each other, as shown in the figure.

4. CAN Installation

4.1. CAN Interface

There are two CAN interfaces, CAN2L/CAN2H, CAN1L/CAN1H. And CAN2 can also be connected to the J1708 interface of the vehicle.

Figure 18. CAN Interface

4.2. Installation Diagram

4.2.1. General Connection Diagram for Passenger Cars

Generally, CAN1 and CAN2 interfaces in GV355CEU can be connected to a passenger car's CAN-BUS interface and OBD interface, as shown below.

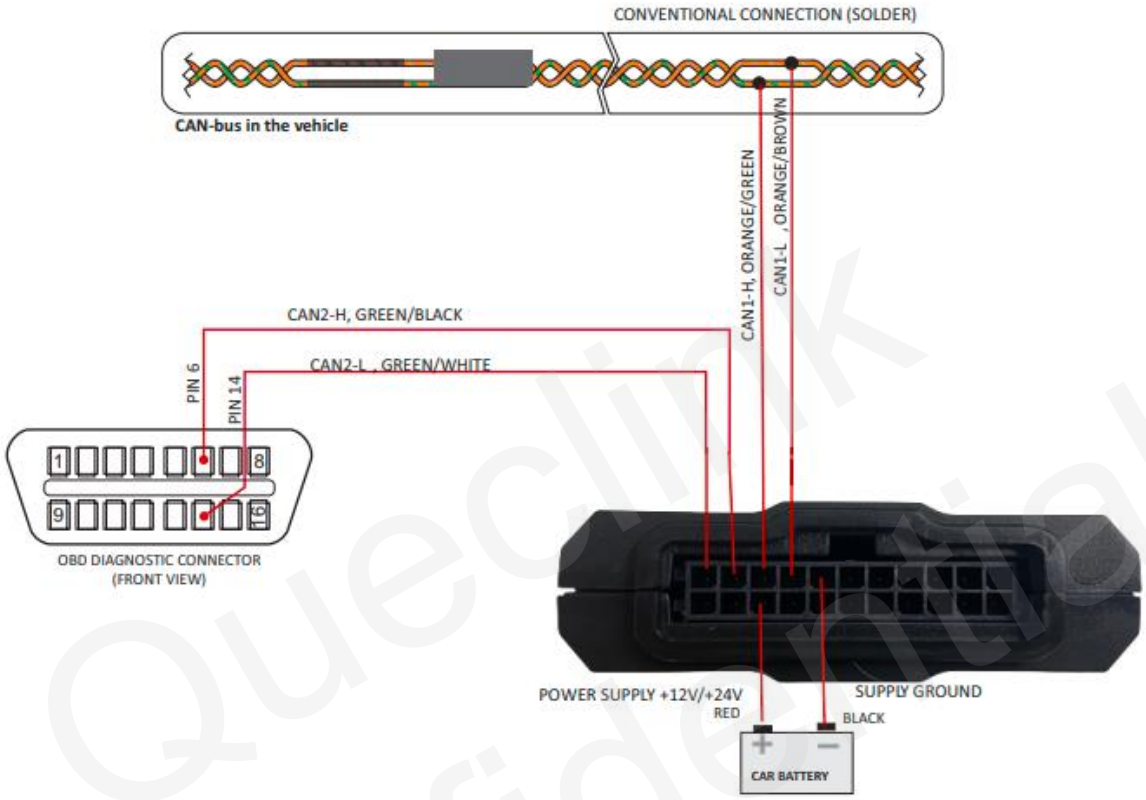


Figure 19. For Passenger Cars

Note:

There is an installation manual for every supported car model. It is crucial to connect CAN1 wires to particular vehicle's CAN-BUS. Connecting to invalid CAN-BUS may result in partial or total loss of logistic data.

When, due to installation manual of particular car model, CAN1 is to be connected to OBD pins 6&14, connection of CAN2 shall be void.

4.2.2. Connection Diagram for Trucks with J1939 (CAN-BUS) and J1708

Generally, J1939 can be connected to CAN1 of GV355CEU, and J1708 can be connected to CAN2 of GV355CEU, as shown below.

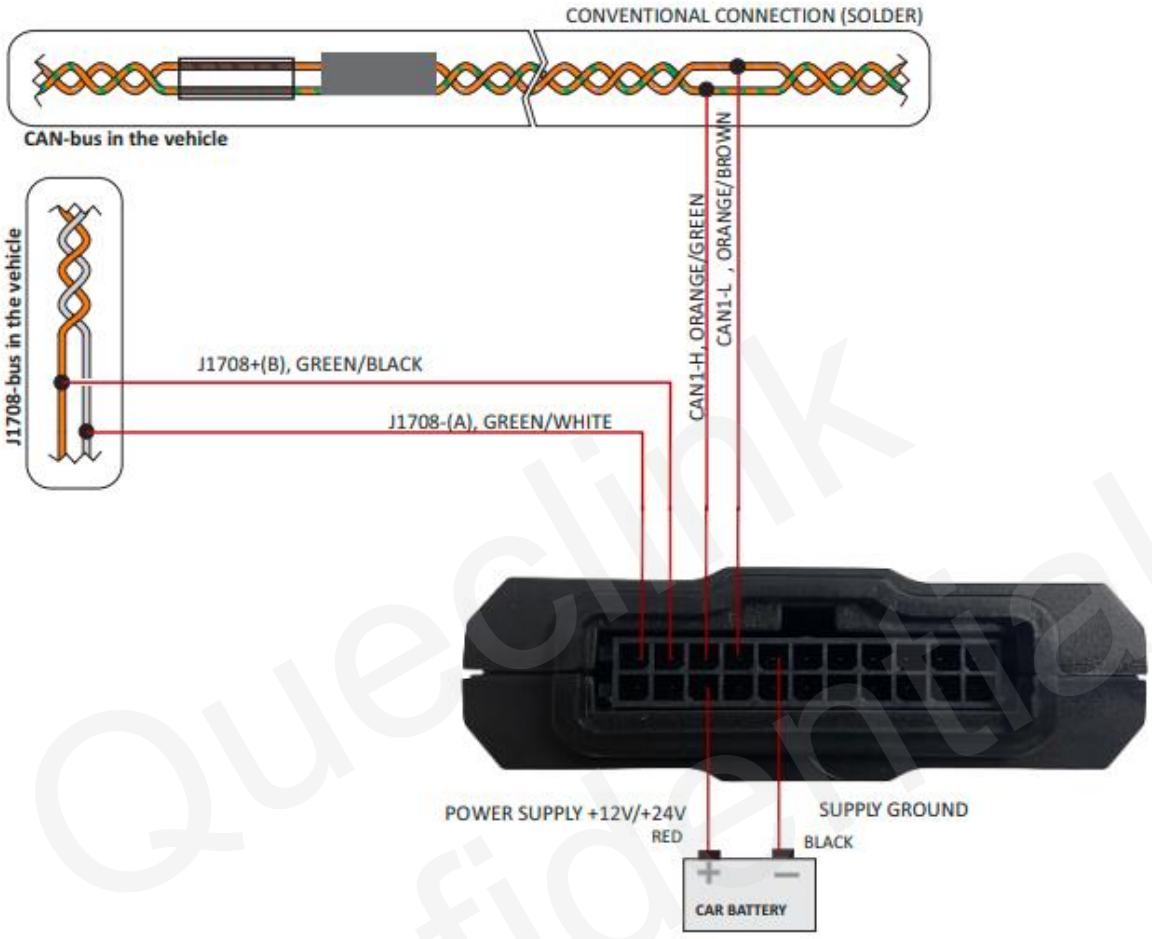


Figure 20. For Trucks with J1939 (CAN-BUS) and J1708

Note:

For connection places of CAN and J1708 for particular truck model, please refer to installation manual for particular truck model.

4.2.3. Connection Diagram of FMS Connector for Trucks

Generally, the FMS connector can be connected to CAN1 of GV355CEU.

FMS connector shape and pinout may vary between truck makes and models. The picture is illustrative. For CAN1 connection position, please refer to the installation manual for the particular truck model.

In general, tachograph should be connected to CAN2, K-LINE and GND while car's CAN-bus is connected to CAN1. If only the tachograph is connected, connect it to CAN2, K-LINE, GND and run auto-synchronization.

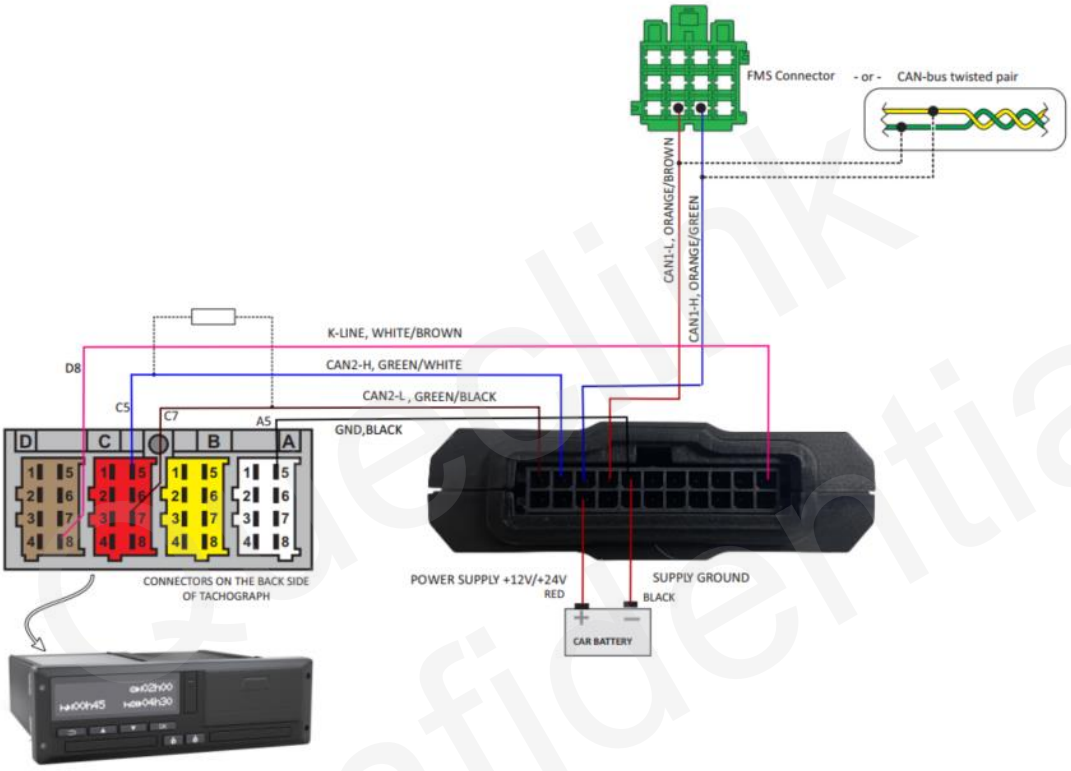


Figure 21. FMS Connector for Trucks

Note: External 120Ω resistor may be required to connect the Tachograph. Please measure the resistance between CAN_H and CAN_L of Tachograph before installation:

1. Tachograph is OFF.

2. Connector C (red color connector) connected to Tachograph.

3. Measure resistance between pins C5-7.

4. If resistance is 120Ω, add external 120Ω resistor:

1) Connect CAN2H and 120Ω cable of GV355CEU together and connect to CAN_H of the tachometer as shown in the figure below:

Figure 22. 120Ω Connection

2) CAN2L of GV355CEU is connected to CAN_L of tachograph.

5. If resistance is 60Ω, no need to add external resistor.

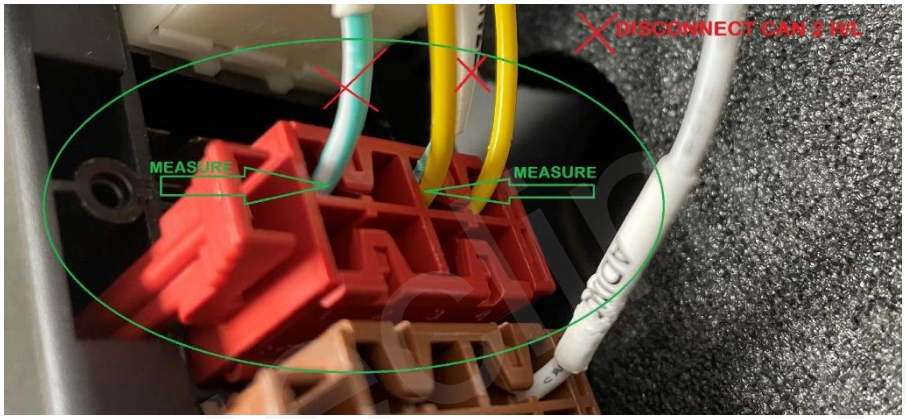


Figure 23. Tachograph

4.2.4. Connection Diagram for J1708-Based Trucks

GV355CEU connects to J1708 based trucks only through CAN2.

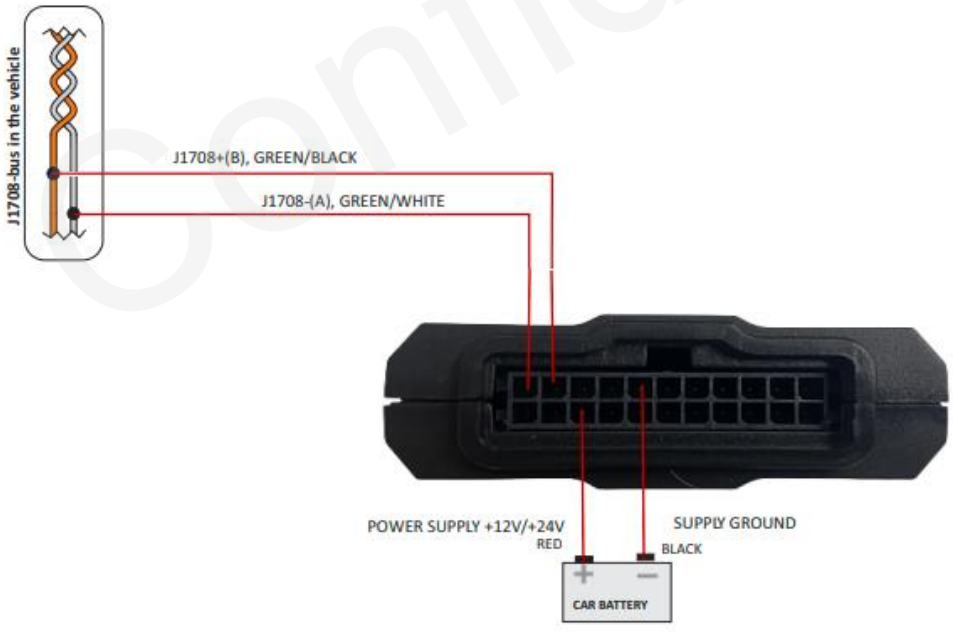


Figure 24. For J1708-Based Trucks

4.3. CAN-BUS Synchronization

CAN-BUS codes synchronization function allows GV355CEU to detect the vehicle model to which the GV355CEU is connected. Switch vehicle ignition on and send the command **AT+GTRTO**=GV355CEU,22,2,,,,,FFFF$ after GV355CEU is installed in the vehicle, and then the synchronization will start. During synchronization, the flashing of the can lamp can be observed. For details, please refer to the commands **AT+GTRTO-22** and **AT+GTRTO-2F**.

4.4. Firmware Upgrade

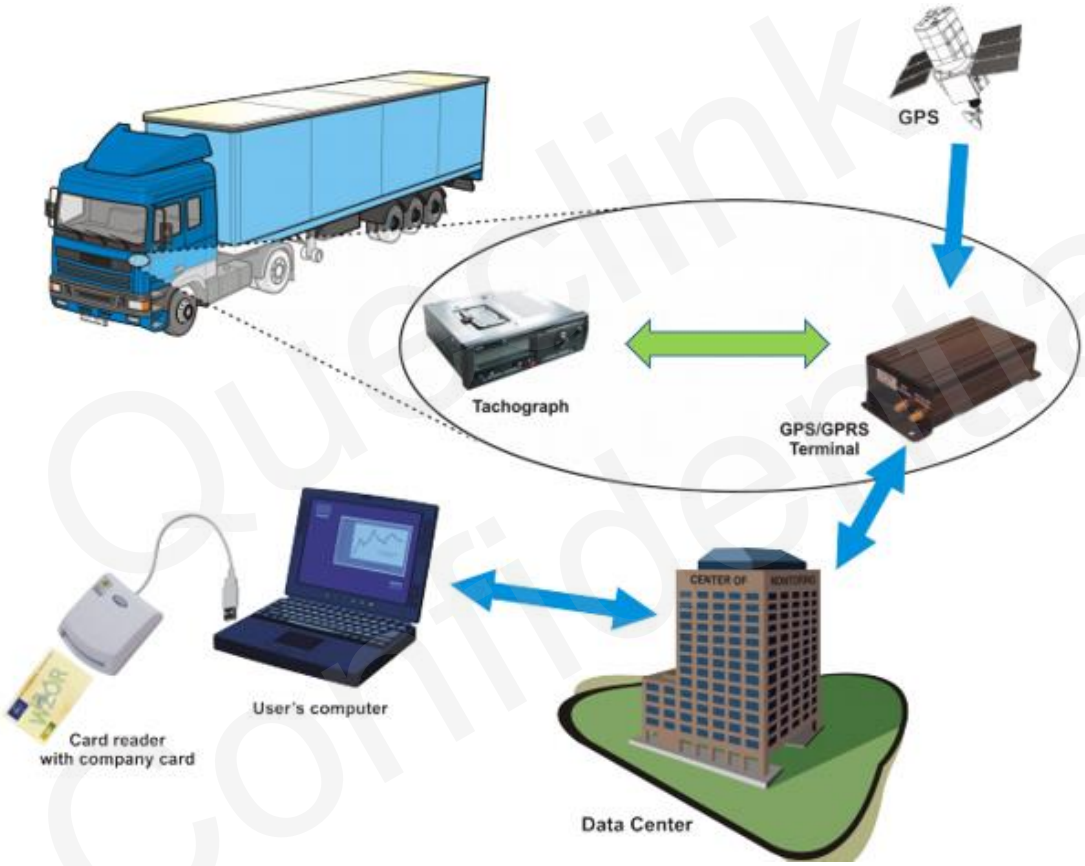
A file with the firmware / configuration is supplied by the manufacturer. CAN firmware upgrade or CAN configuration upgrade can be set through **AT+GTUPD**. For details, please refer to the command **AT+GTUPD**.

5. TachoReader Introduction

5.1. Telemetric System

The terminal can remotely read DDD files from digital tachograph and driver card as a part of telemetric system. Commonly, in order to read files from tachograph, it is necessary to put company card directly into the vehicle's tachograph and download required files with a specific tool. The problem appears when the vehicles are far away in foreign countries but the company card is in the home office.

Data between tachograph and company card is exchanged over the Internet using the existing structure of telemetric system.



Structure of Telemetric System

A typical vehicle monitoring system consists of a telemetric device (GNSS/GPRS terminal) placed in a vehicle, a server and software running on end user's computer.

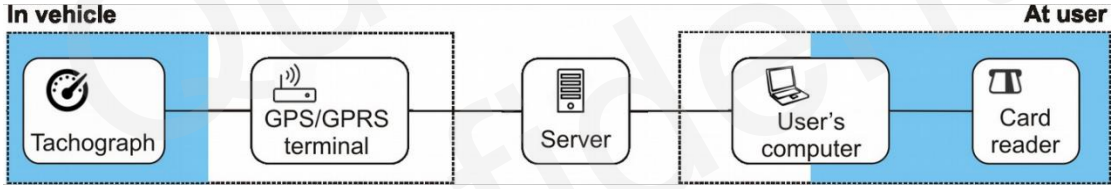
In order to allow a remote download of DDD files from tachograph in a vehicle, the system must be connected with GNSS/GPRS terminal (which is connected to the vehicle's tachograph) and provide its communication with the company card, which is inserted into end user's computer by a card reader.

5.2. Procedure of DDD Files Remote Download

The procedure of reading DDD files from tachograph has 2 stages:
–Authorization, where the tachograph exchanges several encrypted data packets and control commands with the company card.
–Files download, where GNSS/GPRS terminal reads requested data from tachograph memory or driver card.

To perform the authorization, the telemetric system must provide communication between the tachograph and the company card, as shown in the diagram below.
–Card reader with supporting application (TachoCardAuthorizer) to be run on the end user's computer.

Other elements are part of typical telemetric system, that must be adapted by:
–GNSS/GPRS terminal software must be able to send data packets to and from the company card in a timely manner.
–Server software must manage the whole process of remote files download from the time the end user makes a request to providing the DDD files he requested; it must also forward data packets from THR GNSS/GPRS terminal to TachoCardAuthorizer application running on the end user's computer.
–Application running on the backend user's must allow him to make a request of particular DDD files to download from a particular vehicle.



Interactions Between Particular Modules of Telemetric System

Queclink provides elements placed on blue background on the scheme above:
–Communication of GNSS/GPRS terminal with tachograph (all models of tachographs that are available on market and support remote DDD files download), it is required to connect GNSS/GPRS terminal to the tachograph according to the installation manual provided.
–TachoCardAuthorizer application to be run on end user's computer, which provides communication with card reader and company card.
–Communication protocol (over http/https) of TachoCardAuthorizer application with Server.

5.3. Requirements

Communication with GNSS/GPRS terminal requires:
–In GNSS/GPRS Terminal: One free serial port or serial port for communication with Tachograph.
–Fixed network connection between the Terminal and the Server (typically by GPRS) and between the Server and the end user's computer (at least as long as the procedure of

authorization is running).
–Java Runtime Environment (at least version 1.7.0) installed on the end user's computer (requires by TachoCardAuthorizer application).
–One free USB port on the end user's computer to connect card reader.
–Card reader drivers (delivered with the reader).
TachoCardAuthorizer application supports following operation systems (with Java Runtime Environment installed, which can be downloaded free of charge from website: https://www.java.com/en/download/):
–Windows (XP, Vista, 7, 8, 10)
–Linux
–OS X

5.4. Implementation

The implementation of Server is a concern of customer as Queclink provides application TachoCardAuthorizer and GNSS/GPRS terminal device. This chapter contains step-by-step guidelines on how to implement support for GNSS/GPRS terminal on Server.
At the end of this section there is sequence diagram, which shows the entire procedure of downloading DDD files remotely using GNSS/GPRS terminal and card reader application TachoCardAuthorizer.
This procedure refers to:
–TachoCardAuthorizer technical documentation

5.4.1. Request Procedure

Log in
The first step is to configure the TachoCardAuthorizer application to connect to the Server by editing the config.dat file. It is recommended to use debug version of the application and start it from command line to view detailed logs containing all outgoing and incoming http requests. After start, the application asks the user for login data (username, password), which can be omitted during implementation and tests.

Waiting for files download request (the Request)
Server is the manager of all DDD files download requests, and it has to implement a queue of requests. Each Request has its unique request ID and is related to device with the gpsID number and the user who initiates the request.
TachoCardAuthorizer, after login, queries the Server about queue of Requests available for logged-in user. In response, the Server sends a queue of Requests that are ready to authorize. The queue should be empty until any Request is not initiated and confirmed by the GNSS/GPRS terminal.

Request initiation
User interface and way of its communication with the Server is not a concern of this manual. It is assumed, that there exists an interface, where user can make a Request (selecting the vehicle and

the requested files) and enqueue it to the Server.
A new Request with status “queued” appears on Server. Server sends the Request command (including all parameters) to GNSS/GPRS terminal. After GNSS/GPRS terminal accepts the Request, Server can “hand over” it to TachoCardAuthorizer for authorization, place the Request in reply to TachoCardAuthorizer query (GET queue). Application confirms start of authorization procedure for specified Request (GET requests/<requestID>) and this changes Request status to “authorization”. Now TachoCardAuthorizer starts querying Server about APDU packets directed from tachograph and GNSS/GPRS terminal.
At the same time Terminal starts querying GNSS/GPRS terminal about status and awaits the first APDU packet to be sent to company card.

Authorization
Authorization starts when GNSS/GPRS terminal reports that the first APDU packet is ready. Terminal passes it to Server, and when TachoCardAuthorizer asks about awaiting APDU packets (GET apdu/<requestID>/status) – Server confirms there is a APDU packet from device gpsID. Application reads the APDU packet (POST apdu/<gpsID>/dequeue), acknowledges its reception (POST apdu/<gpsID>/commit) and, after a while (fraction of second typically), sends back to Server a response from company card (POST apdu/<gpsID>).
Consecutive APDU packets delivered by GNSS/GPRS terminal should be numbered by Terminal (seqNumber) to keep packets order in case of GPRS connection problems. One packet can be retransmitted over GPRS (acknowledges are concern of the telemetric system), but it must not be delivered to GNSS/GPRS terminal twice. So if Terminal receives an APDU packet, which has already been sent to GNSS/GPRS terminal (recoginzd by seqNumber), it must be trashed.
SeqNumber is passed with packet to Server and TachoCardAuthorizer. Reply of company card returns from TachoCardAuthorizer to Terminal with the same SeqNumber.
After Terminal passes the reply to GNSS/GPRS terminal, the Terminal continues querying about status and waits for next APDU packet from tachograph or for the end of authorization procedure.
Reply from company card to GNSS/GPRS terminal must be delivered within maximum 1 minute (typically no more than 10 seconds), otherwise GNSS/GPRS terminal would restart authorization and report new APDU packet to Terminal without waiting for previous reply.
After the third failed attempt, the GNSS/GPRS terminal reports authorization error and cancels the Request.
If some error is detected on the Server side (i.e. timeout, connection error, canceled by user), the Request status should be changed to “error”, which causes the TachoCardAuthorizer to cancel the authorization and get ready for further Requests.

The end of authorization
When tachograph accepts authorization of company card, the GNSS/GPRS terminal changes its status and the terminal has to forward this information to the Server so that the status of Request changes to “transferring”, indicating that the files are being downloaded from the tachograph. The TachoCardAuthorizer will be the last, knowing that the authorization ends as it continues to query the Server about Request status (GET apdu/<requestID>/status).
When the status changes, the TachoCardAuthorizer shows a message to the end user and start to

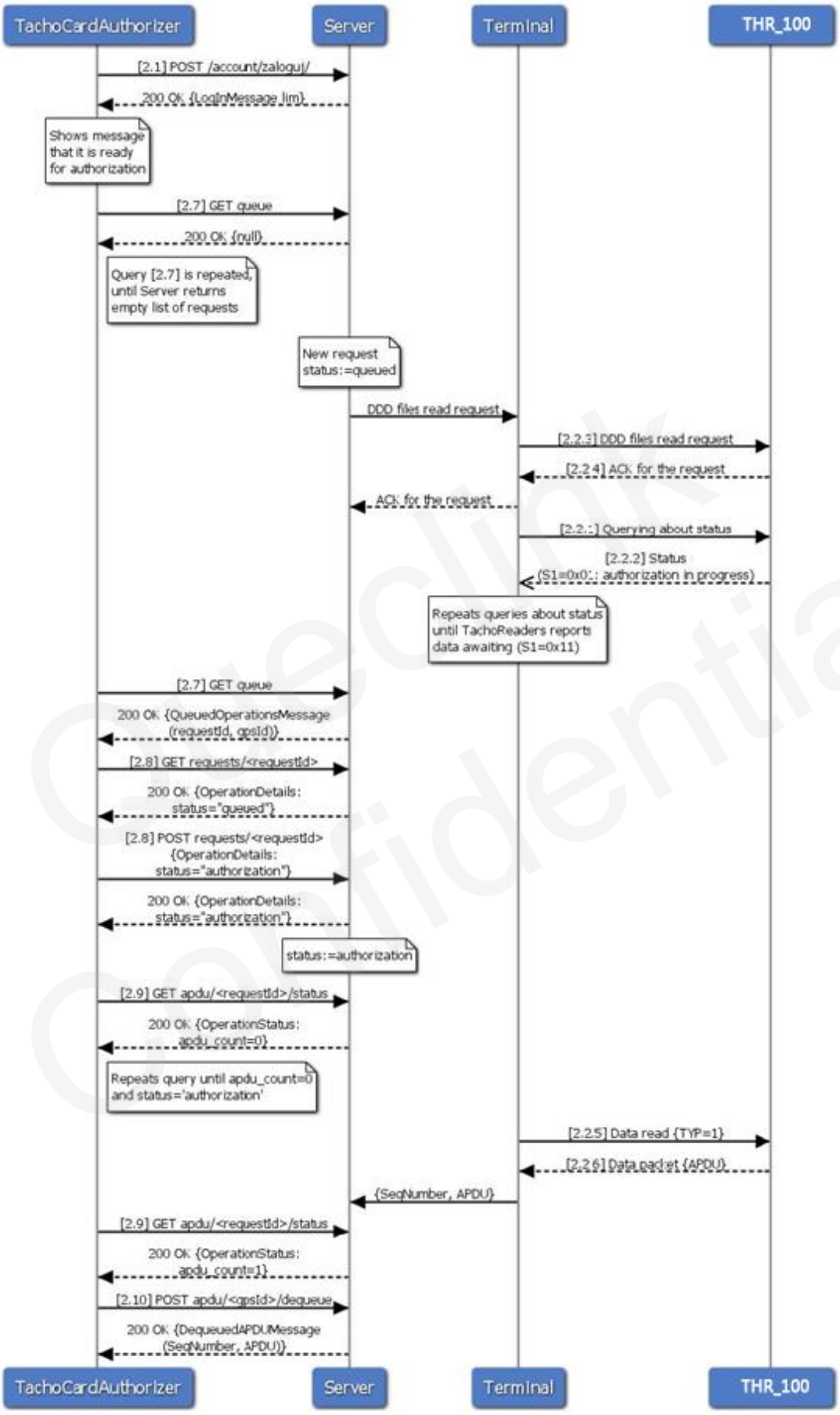
query the Server for the next enqueued Request (GET queue). Anyway, TachoCardAuthorizer may now be closed and card reader detached.

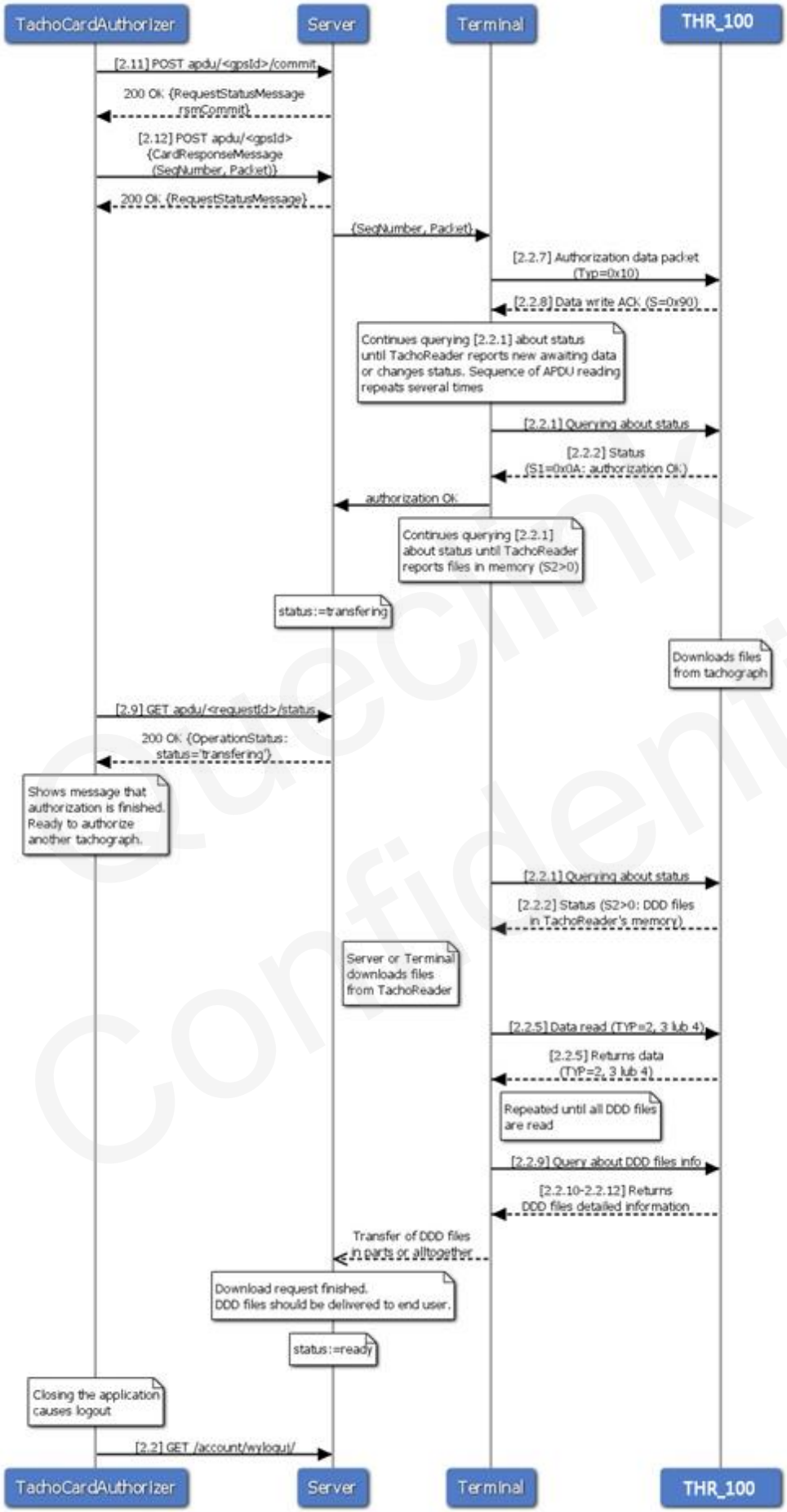
Download files from tachograph

Since that moment, only the Terminal and the Server are engaged in Request.
The Terminal continues to query Terminal about its status until it reports that files are ready.
Then the Terminal must download files from the Terminal, including information about the name, length and checksum of the files, and forward them to the Server.
The Server stores the files or sends them to the end user, and the Request is over.

5.4.2. Sequence Diagram

Please check file “Sequence Diagram.pdf”.


TachoCardAuthorizer
Server
Terminal
THR_100
[2.1] POST /account/zaloguj/
200 OK {LoginMessage lim}
Shows message that it is ready for authorization
[2.7] GET queue
200 OK {null}
Query [2.7] is repeated, until Server returns empty list of requests
New request status:=queued
DDD files read request
[2.2.3] DDD files read request
[2.2.4] ACK for the request
ACK for the request
[2.2.1] Querying about status
[2.2.2] Status (S1=0x01: authorization in progress)
Repeats queries about status until TachoReaders reports data awaiting (S1=0x11)
[2.7] GET queue
200 OK {QueuedOperationsMessage (requestId, gpsId)}
[2.8] GET requests/<requestId>
200 OK {OperationDetails: status="queued"}
[2.8] POST requests/<requestId> {OperationDetails: status="authorization"}
200 OK {OperationDetails: status="authorization"}
status:=authorization
[2.9] GET apdu/<requestId>/status
200 OK {OperationStatus: apdu_count=0}
Repeats query until apdu_count=0 and status='authorization'
[2.2.5] Data read {TYP=1}
[2.2.6] Data packet {APDU}
{SeqNumber, APDU}
[2.9] GET apdu/<requestId>/status
200 OK {OperationStatus: apdu_count=1}
[2.10] POST apdu/<gpsId>/dequeue
200 OK {DequeuedAPDUMessage (SeqNumber, APDU)}
TachoCardAuthorizer
Server
Terminal
THR_100


TachoCardAuthorizer
Server
Terminal
THR_100
[2.11] POST apdu/<gpsId>/commit
200 Ok {RequestStatusMessage rsmCommit}
[2.12] POST apdu/<gpsId> {CardResponseMessage (SegNumber, Packet)}
200 Ok {RequestStatusMessage}
{SegNumber, Packet}
[2.2.7] Authorization data packet (Typ=0x10)
[2.2.8] Data write ACK (S=0x90)
Continues querying [2.2.1] about status until TachoReader reports new awaiting data or changes status. Sequence of APDU reading repeats several times
[2.2.1] Querying about status
[2.2.2] Status (S1=0x0A: authorization Ok)
authorization Ok
Continues querying [2.2.1] about status until TachoReader reports files in memory (S2>0)
status:=transfering
Downloads files from tachograph
[2.9] GET apdu/<requestId>/status
200 Ok {OperationStatus: status='transfering'}
Shows message that authorization is finished. Ready to authorize another tachograph.
[2.2.1] Querying about status
[2.2.2] Status (S2>0: DDD files in TachoReader's memory)
Server or Terminal downloads files from TachoReader
[2.2.5] Data read (TYP=2, 3 lub 4)
[2.2.5] Returns data (TYP=2, 3 lub 4)
Repeated until all DDD files are read
[2.2.9] Query about DDD files info
[2.2.10-2.2.12] Returns DDD files detailed information
Transfer of DDD files in parts or altogether
Download request finished. DDD files should be delivered to end user.
status:=ready
Closing the application causes logout
[2.2] GET /account/wylogui/
TachoCardAuthorizer
Server
Terminal
THR_100