

Document Information			
Model	V311	Release Date	2019-09-16
Document Version	Rev 1.0	Last Updated	2026-02-06
Hardware Version	V1.1	Main MCU	STM32F103VET6

Overview

This document provides technical specifications and reference information for the V311 handheld OBD2 code reader. It is intended for B2B wholesale, OEM/ODM customers for product evaluation and integration planning.

Purpose of Document

This document defines key functions, supported standards, electrical/mechanical specifications, packaging information, and storage/transportation requirements for V311.



Key Features

- 9 standard OBD-II/EODB protocols
- Read/clear emission DTCs
- Live data stream & waveform
- Freeze frame data
- Over-current/voltage protection
- I/M readiness status
- Vehicle info (VIN/CALID/CVN)
- Data storage & playback (Review)
- Wide voltage: DC 8-36V
- USB Type-C firmware update (IAP)

Physical Specifications

- Size: 156×88×24mm
- Weight: 198g
- Display: 2.8" TFT
- MCU: STM32F103

Supported OBD Functions

- Read DTCs (stored/pending/permanent)
- Clear DTCs and reset MIL
- Vehicle info (VIN/CALID/CVN)
- Live Data: list & waveform view
- I/M Readiness (monitor status)
- Freeze Frame data

Note: Supported PIDs and test modes vary by vehicle make/model/year/region. Availability subject to ECU support.

Technical Specifications			
Main MCU	STM32F103VET6	Display	2.8-inch TFT color display
Working Voltage	DC 8-36 V (vehicle power)	Working Current	58 mA (typical)
Operating Temperature	-20°C to 65°C	Storage Temperature	-30°C to 80°C
Dimensions (L×W×H)	156 × 88 × 24 mm	Weight	198 g
OBD Connector	16-pin OBD-II / EOBD DLC	Firmware Update	USB Type-C (IAP mode, Windows PC)

Note: V311 features a wide input voltage design (DC 9-36 V) with built-in over-current and over-voltage protection, making it safer and more versatile than traditional 9-16 V tools.

Supported Protocols (9 Standard OBD-II/EODB Protocols)

- SAE J1850 PWM (41.6 Kbaud)
- SAE J1850 VPW (10.4 Kbaud)
- ISO 9141-2 (5 baud init, 10.4 Kbaud)
- ISO 14230-4 KWP (fast init, 10.4 Kbaud)
- ISO 15765-4 CAN (11-bit ID, 500 Kbaud)
- ISO 15765-4 CAN (29-bit ID, 500 Kbaud)
- ISO 15765-4 CAN (11-bit ID, 250 Kbaud)
- ISO 15765-4 CAN (29-bit ID, 250 Kbaud)
- ISO 14230-4 KWP (5 baud init, 10.4 Kbaud)

Supported Data Items (Examples)

- Engine RPM
- Calculated load value
- Fuel system status
- Ignition timing advance
- Coolant temperature
- Vehicle speed
- Intake manifold pressure
- Oxygen sensor voltage
- Short-term fuel trim
- Long-term fuel trim
- Throttle position (absolute)
- Fuel consumption monitoring
- Intake air temperature
- Mass air flow (MAF)
- Fuel pressure

OBD-II 16-Pin Interface Definition

Pin	Signal Name	Description	Pin	Signal Name	Description
1	—	Reserved	9	—	Reserved
2	J1850+	SAE J1850 BUS+	10	J1850-	SAE J1850 BUS-
3	—	Reserved	11	—	Reserved
4	CGND	Chassis ground	12	—	Reserved
5	SGND	Signal ground	13	—	Reserved
6	CAN-H	CAN High	14	CAN-L	CAN Low
7	K-LINE	ISO 9141-2, ISO 14230-4	15	L-LINE	ISO 9141-2, ISO 14230-4 (optional)
8	—	Reserved	16	VBATT	Battery power (+12V/24V)

Package Contents

- ✓ V311 main unit (with OBD cable) × 1
- ✓ User manual × 1

Packaging

- Product dimensions: 156 × 88 × 24 mm
- Individual package dimensions: 200 × 130 × 43 mm
- Net weight (per unit): 198 g
- Gross weight (per unit, with packaging): 315 g
- Quantity per master carton: 40 pcs
- Master carton dimensions: 54 × 42 × 23.5 cm

Transportation

- ✓ Avoid strong vibration, impact, extrusion
- ✓ Keep away from rain and direct sunlight

Storage

- ✓ Store in clean, ventilated, cool and dry place
- ✓ Protect from moisture

Safety Information

- Perform vehicle testing in safe environment. Apply parking brake and keep vehicle stationary
- Do not connect or disconnect device while ignition is ON or engine is running
- Do not use device while driving
- Exhaust gases are poisonous. Work in well-ventilated area

Disclaimer

- Supports OBD-II / EOBD compliant vehicles with standard 16-pin diagnostic connector
- OBD-II functions mainly cover engine/emissions. Coverage of other systems (ABS/SRS/Transmission) is not guaranteed
- Available data items, readiness monitors and test modes depend on vehicle ECU and model year
- Language precedence: In case of discrepancies, the English version shall prevail