



Snap-on® VERUS Diagnostic & Information System

PRODUCT FEATURES

- Integrated diagnostic & information system
- Expandable platform with upgradeable software
- 4-channel lab/ignition scope
- Color graphing scan tool
- Domestic and Asian Fast-Track® Troubleshooter
- Fast-track Reference database
- Digital Graphing Multimeter
- Customer/Vehicle information database function
- Data manager function
- Open Internet browser

HARDWARE PLATFORM

- 10.4" Color, 1024x768 resolution backlit touchscreen LCD
- 512 MB RAM
- 80 GB internal HDD
- Internal audio microphone and 1W speaker
- Audio output port, Auxiliary port
- VGA output for remote display or projection interface
- USB and serial ports for accessories (printer, keyboard, mass storage devices, gas analyzer and more)
- Ethernet port, and 802.11b/g wireless Ethernet

SYSTEM & USER INTERFACE

- Windows XP operating system
- Open system allows user-installed software
- Application multitasking capability
- User-specified display options
- Touchscreen navigation
- On-screen virtual keyboard

STANDARD ACCESSORIES

- Vehicle communication interface cable, keys, adapters for 1996-newer US Domestic & Asian & OBD-II vehicles
- 4-Channel shielded, color-coded scope leads
- 110VAC adapter/charger
- Removable Lithium-ion battery pack
- Carry case

SCAN TOOL SPECIFICATIONS

- Snap-on vehicle communication and Fast-Track Troubleshooter software included
- Reads & clears OBD-II and OEM-specific trouble codes
- Displays complete trouble code descriptions
- Displays from one to twelve live data parameters (PIDs) simultaneously in graphing mode
- Adjustable sweep; Min/Max capture in graphing mode
- Includes functional tests and bidirectional controls
- Save screen captures and scanner movies

VERUS® EEMS323

BID SPECIFICATION

- Software coverage for 1980-newer US Domestic, Asian Import and European OBD-I and OBD-II compliant vehicles
- Optional European vehicle software with enhanced coverage for Alfa Romeo, Audi, BMW, FIAT, Jaguar, Land Rover, MINI, Mercedes, Porsche, SMART, Volvo and VW

GLOBAL OBD-II VEHICLE COMMUNICATION SOFTWARE

- Communicates with 1995 and newer OBD-II compatible vehicles
- Automatically establishes communication with the appropriate vehicle protocol
- Displays active communication protocol information
- Tests system readiness status

10 Modes of OBD-II

- Mode 1: graphs or displays current data
- Mode 2: retrieves freeze frame data
- Mode 3: monitors diagnostic trouble codes
- Mode 4: clears emissions related data
- Mode 5: oxygen sensor monitoring
- Mode 6: non-continuously monitored systems
- Mode 7: diagnostic trouble codes detected during last drive
- Mode 8: bi-directional controls (where available)
- Mode 9: displays important vehicle information
- Mode 10: permanent codes

GM VEHICLE COMMUNICATION SOFTWARE '80 – '2015

- Enhanced OBD-I, OBD-II & Generic OBD-II modes
- Engine/Powertrain, Transmission, ABS, Airbag, Body, Instrument Panel, Vehicle Theft Deterrent, Tire Pressure Monitor, Transfer Case, Trailer Break Control Diagnostics Code Scan, Clear All Codes, Seats, Parking Brake, Steering Angle, Auto-ID
- Front View Camera
- Radio/HVAC
- Headlamp Modules
- Auxiliary Body Controls
- Air Suspension
- Active Grille Air Shutter Module
- Object Detection
- Telematics
- Seat Modules
- Rollover Sensor for Safety Systems
- 6.6L Crankshaft Position (CKP) Sensor Test
- Passenger Presence
- Diesel Power Balance Test
- Vehicle Theft Deterrent Codes, Data & Indicator Status
- Radio Systems Codes, Data & Test Including VIN Write
- HVAC Actuator & Recalibration
- 6.6L Turbo Tests
- Theft Deterrent, Keyless Entry and Remote Function Actuation
- ABS & Air Bag GM symptom codes
- Brake Pedal Pressure (BPP) Relearn
- Engine Bi-Directional Testing, incl. EVAP Monitor Test and EVAP System Testing, Output Controls, Injector Balance, ICB, IAC, EGR, Crank Pos Relearn
- Particulate Filter Replacement & Fuel Filter Life Reset Function – Diesel engines where applicable
- Transmission Bi-Directional Testing, incl. Solenoid Tests, Trans Shifting and Adaptive Resets

VERUS® EEMS323

- BID SPECIFICATION -

- ABS Diagnostics and Brake Bleeding, incl. Bosch, Delco-Moraine, Teves
- Dash and Rear Integration Modules
- BCM Bi-Directional Testing, incl. Door Locks, Lights, Chimes, Horn, Wipers
- 2004 and newer Key FOB Programming

FORD VEHICLE COMMUNICATION SOFTWARE 1981 – 2015

- Enhanced OBD-I, OBD-II & Generic OBD-II modes
- Engine, Transmission, ABS, Airbag, Occupant Classification, Body/GEM, Instrument Panel, Anti-Theft, Transfer Case, GEM, 4x4 Module, Tire Pressure Monitor, Driver's Door, Driver's Seat, Sliding Door, Liftgate Trunk, Power Running Boards, Lighting Control, Auto Temp Control/HVAC, Navigation, Parking Aid, Electric Power Steering, Battery Control Diagnostics
- Injector Balance and Relative Compression Engine Tests
- Injector Quantity Adjustment and Injector Buzz Diesel Engine Test
- Clutch Tests and Relearn for Auto-Shifting Manual Transmissions
- Airbag Sub-Codes
- PATS Key Programming (CAN Vehicles)
- Battery Monitor
- Crankshaft Position (CKP) Relearn
- Engine Functional Tests
- EVAP
- Code Scan and Clear All Codes
- CAN UDS Auto-ID
- OEM Sub codes
- Door and Window Modules
- 6.4L Tests and Turbo PIDs
- 6.7L Diesel Particulate Filter (DPF) Tests
- 6.7L Functional Tests
- 6.4L DPF Manual Regeneration
- Ford/Lincoln Air Suspension Re-calibration
- Engine Bi-Directional Testing, incl. EEC V engine controls, EVAP System Testing, Cold Soak Test, 7.3 Powerstroke Cylinder Contribution
- EGR functional test & Injector power balance 6.0 diesel engines
- Vane Turbo Functional Test 6.0 diesel
- Cylinder Contribution test – includes non-CAN, CAN and UDS Vehicles, where applicable
- Transmission Bi-Directional Testing, incl. Transmission Bench and Drive Tests, Gear Command, Adaptive Learning, Trans Table Resets
- ABS Diagnostics, Brake Bleeding and Pump Motor Test, incl. Bosch, Teves, and Kelsey-Hayes
- Air suspension codes, data, functional test

CHRYSLER VEHICLE COMM SOFTWARE 1983 – 2014

- Enhanced OBD-I, OBD-II & Generic OBD-II modes
- Engine, Transmission, ABS, Airbag, Body, Occupant Classification Module, Central Gateway, Instrument Panel, Transfer Case Diagnostics, HVAC, Steering angle sensor, ESP, Door Modules, Park Assist, Central Gateway, Instrument Panel, Transfer Case Diagnostics, Code Scan
- Active Dampening
- Blind Spot Module

- Adaptive Cruise Control
- Air Suspension
- BCM Configuration
- Sub Codes
- 6.7L Transmission Quick Learn
- Pinion Factor
- Diesel Exhaust Fluid (DEF) Tests
- HVAC Systems
- Engine Misfire Detection
- Diesel Cylinder Performance Test
- DPF Stationary De-Soot
- NAG Transmission Resets & Initialization
- Engine Bi-Directional Testing, incl. Actuator Tests, Forced EVAP Monitor Test, Set RPM/IAC Test, Purge Vapors Test, EGR System Test, ETC Throttle Follower Test, Misfire Counters, Generator Field, PCM VIN Programming
- Particulate Filter Replacement & Fuel Filter Life Reset Function – Diesel engines where applicable
- Transmission Bi-Directional Testing, incl. EMCC Reset, Quick Learn, Quick learn CAN, Battery Disconnect
- ABS brake bleed coverage, incl. Kelsey-Hayes, Teves, Bendix
- Body ATM Tests, incl. Door Locks, Lights, Chimes, Horn, Wipers, Sunroof and Overhead Module
- HVAC, codes, data, functional test
- TPMS including sensor ID function
- Parktronics (park assist)

ASIAN VEHICLE COMM SOFTWARE 1983 – 2015

- Enhanced OBD-I, OBD-II & Generic OBD-II modes
- In-depth Engine (including Hybrid), Transmission, Airbag & ABS, (HVAC, Instrument panel, TPMS, Cruise Control, certain OEM's), Code Scan, Clear All Codes, Power Steering coverage for the most popular Asian Import vehicle makes:
 - Acura, Daihatsu, Honda, Hyundai, Infiniti, Isuzu, Kia, Lexus, Mazda, Mitsubishi, Nissan, Scion, Subaru, Suzuki, Toyota
- Honda Engine Control Module (ECM) Replacement Function
- Honda Transmission Control Module (TCM) Replacement Function
- Hyundai Body Control Module (BCM)
- Hyundai/Kia/Mazda Occupant Classification Module (OCM)
- Mazda Engine and ABS Functional Tests
- Mitsubishi Vehicle Coding
- Nissan/Infiniti Intelligent Key System
- Hyundai/Kia Advanced Safety Systems (Smart Cruise Control, Lane Departure Warning, Blind Spot Detection Systems)
- Mitsubishi Timing Chain Maintenance Functions
- Toyota/Lexus Park Assist System
- Toyota Multiple Freeze Frame
- Mazda Sub Codes
- Suzuki Code Scan
- Nissan Electronic Power Steering (EPS)
- Honda Adaptive Cruise, Collision and Lane Module, Blind Spot Info
- Hyundai/Kia Electronic Park Brake
- Toyota Push Start Button
- Toyota Electronic Activated Control (EAC) Mounts

VERUS® EEMS323

- BID SPECIFICATION -

- Toyota/Mazda Auto-ID
- Suzuki 4WD and Power Steering
- Toyota/Lexus/Scion Transmission, Park Brake and Main Body
- Honda Vin Programming
- Honda/Acura Adaptive Cruise Control
- Hyundai/Kia Cylinder Power Balance
- Subaru TPMS
- Nissan/Infiniti HVAC Codes, Data & Test
- Suzuki HVAC Codes, Data & Test
- Mazda EVAP Test
- Hyundai & Kia Power Intelligent Control System
- Honda Civic and Acura Hybrid Brake
- Suzuki TPMS Systems
- Toyota Air Injection Test
- Mazda ABS Function Tests
- Lexus Air Suspension
- Toyota VIN Writing, Immobilizer System, Engine Memory Reset and Door/Mirror Modules
- Honda & Acura Occupant Detection
- Nissan Intelligent Cruise Control
- Hyundai, Kia and Mitsubishi PCM VIN Write
- Honda/Acura TPMS coverage including tire registration

DOMESTIC/ASIAN IMPORT DRIVEABILITY FAST-TRACK® TROUBLESHOOTER

General Motors, Ford, Chrysler/Jeep, Acura, Daihatsu, Honda, Hyundai, Infiniti, Isuzu, Kia, Lexus, Mazda, Mitsubishi, Nissan, Subaru, Suzuki, Toyota

- Domestic 1980 – 2015
- Asian Imports 1983 – 2015
- Capability to leverage the powerful information in the 10 modes of Global OBD-II
- Troubleshooter procedures that verify a repair is completed and fixed properly
- Exclusive information with instrumentation developed by technicians for technicians
- Over 6.8 Million VIN-specific Troubleshooter Tips
- Exclusive VIN-Specific troubleshooting and systems repair information covering code specific, no code, no-start, driveability symptoms and frequent component failures
- Enhanced OBD-II Fast-Track data scan tips reflect manufacturer-specific enhanced DataStream capabilities
- Component locators
- Service procedures and specifications
- Code set specifications
- Fast-Track wiring diagrams, VIN-specific service bulletins and procedures
- Enhanced diesel symptom tips
- Enhanced functional test descriptions
- Firing orders and cylinder locations

DOMESTIC/ASIAN IMPORT TRANSMISSION FAST-TRACK TROUBLESHOOTER

- Domestic 1981 through 2015 model year
- Asian import 1983 – 2015
- Electronic Controlled Transmission/transaxle coverage
- Technical service bulletins
- Enhanced Fast-Track data scan tips

- Transmission functional test insight
- Hundreds of transmission wiring diagrams

DOMESTIC/ASIAN IMPORT ABS, BODY, AIRBAG FAST-TRACK TROUBLESHOOTER

- Solutions for ABS-related codes through 2014 models
- Symptom-based tips for 2014 models and earlier
- 24 vehicle makes supported
- Additional reference material and service bulletins
- Electronic Steering & Alignment functions

FAST-TRACK TROUBLESHOOTER REFERENCE DATABASE

- Reference information for 24 vehicle makes accessed on-screen directly via hotlinks from the scan tool
- OEM-sourced information, including diagnostic reference information from TSBs, service manuals, test procedures, vehicle specifications, schematics, wiring diagrams and more
- Coverage for drivability, transmissions and brake systems

NOTE: Scan tool coverage varies by model. Information current as of 2/16/2016. Subject to change without notice.

LAB SCOPE PLUG-IN SPECIFICATIONS

Four-Trace Scope: Captures and displays “live” signals up to four waveforms on screen in real time

Note: Also see SYSTEM SPECIFICATIONS at end of this document.

- Displays digital readout along with each waveform to determine voltage at the selected point on the waveform
- Color-coded waveform for each channel
- Manual & automatic display configuration for each channel
- Snapshot: Capture data over time saved into a buffer
- Easy Scroll: Streamlines selection of menu and toolbar
- AC Coupling: Provides the ability to enlarge the alternating current (AC) component of a signal for closer examination
- Invert: Flip waveform to adjust for flexible hookups and easier viewing
- Autofind: Automatically pre-configure the vertical scale
- Load Configuration: Select factory preset screens or define a custom setup and retrieve them as needed – diagnostic tasks most frequently performed on specific components can be selected to view the performance of sensors, actuators and circuits on a vehicle
- Peak Detect: User selectable for capturing hi-speed signals

DIGITAL & GRAPHING MULTIMETER SPECIFICATIONS

- Auto scaling, high-impedance multimeter measurement system
- Digital and graphing display of results
- Pinpoint measurement of:
 - DC volts, AC Volts RMS, Ohms, Frequency, Pulse-width, Injection pulse-width, Duty cycle
 - Interface for optional amp probe and pressure/vacuum transducers
 - Continuity tester with audible beep

POWER/WEIGHT/DIMENSIONS

VERUS® EEMS323

- BID SPECIFICATION -

- Line power: 110/17V adapter/charger included
- Battery: Lithium-ion battery pack included
- Weight: 7.7 lbs – VERUS platform with battery
- Dimensions: 14.4"W x 9.2"H x 3.4"D

OPTIONAL ACCESSORIES – SCAN TOOL

- Domestic/Asian OBD-I Adapter Kit – EAK0288B04B
- European Vehicle Software Activation – EESP323E
(1986 – later BMW, 1991 – later VW/Audi, 1992 – later Mercedes-Benz and 1996 – 09 Land Rover)
- 2000 – 2009 Volvo Vehicle Communication Software

European Vehicle Adapter Kit – EAK0267B01E Specialty

KIA Adapter for ABS & Airbag

Optional Accessory: P/N EAA0355L92A

Optional IGNITION ADAPTERS

- EETA309A15 - Multiple Ignition Lead Module
- EETM306A03 COP-1 Ford
- EETM306A04 COP-2 Chrysler
- EETM306A05 CIC-2 Honda, Toyota
- EETM306A06 CIC-1 GM
- EETM306A07 COP-3 Audi, VW
- EETM306A08 COP-4 Acura/Honda, Isuzu
- EETM306A09 COP-5 Volvo/BMW
- EETM306A10 COP-6 Mercedes
- EETM306A11 COP-7 Mercedes Dual
- EETM306A12 COP-8 BMW
- EETM306A13 COP-9 Lexus
- EETM306A14 COP-11 Audi, BMW, Chrysler, Jeep, Lexus, Mercedes, Saab, Toyota, Volvo, VW

OPTIONAL ACCESSORIES – VERUS PLATFORM

- Pass-Thru-Pro II J2534 reprogramming device - EETA113B
- Battery Pack - EAA0354L12A
- External Battery Pack Charger - EAE0059L07A
- Charging Station w/USB Hub - EAK0294B02A
- Screen Protectors (3 pack) - EAC0101L69A1
- Fan Filters (5 pack) - EAK0253B02A
- Maintenance Kit - EAK0294B08A
- Silicone Protective Skin - Black - EAC0101L70A1
- Silicone Protective Skin - Blue - EAC0101L70A2
- Silicone Protective Skin - Red - EAC0101L70A3
- Portable 5-Gas Analyzer - EEEA305APC
- Replacement Software Activation and Upgrade Device - EAA0354B17A

OPTIONAL ACCESSORIES - LAB SCOPE/METER

- Low Amp Current Probe – EETA308D
- Ignition Scope Lead Set – EAK0294B09A
- Transducer "Y" Adapter Cable – EAX24B40A
- 6' Transducer Extension Cable – EAX0024B30A
- Split Lead Adapter – EEMS301A05
- 100 PSI Pressure/Vacuum Transducer w/cable – EEPV302AL
- 500 PSI Press Trans w/cable – EEPV302AT
- 5000 PSI Press Trans w/cable – EEPV302AH
- Transducer Extension Cable – EAX0024B30A
- Waveform Emulation Demo Board – EESX306A

VERUS® EEMS323 - BID SPECIFICATION -

VERUS SYSTEM SPECIFICATIONS

VERUS MULTIMETER

Function	Range	Comments
Channels	1 – 2	Common Ground
Sample Rate	6.0 MSPS	Simultaneous
	1.5 MSPS	Continuous per channel
Bandwidth	DC – 3 MHz	3 db point @ 3 MHz
Input Impedance	10 M Ω @ DC	All channels
	5.8 k Ω @ 3MHz	
V dc (Full Scale)	75 V maximum	
V ac (Full Scale)	50 V maximum	
Peak to Peak Voltage		

VERUS DIGITAL METER OHMS AND DIODE CONTINUITY TESTS

Function	Range	Comments
Channels	3 – 4	Inputs between channels 3 (-) and 4 (+)
Input Impedance	10 M Ω	
Glitch capture	Approximately 50 mS	
Ohms	400 Ω – 40 M Ω	Fixed scales or Auto Ranging
Diode Test	2 V Scale	

VERUS GRAPHING MULTIMETER

Function	Range	Comments
Input Channels	1 – 2	
Input Impedance	10 Megohm	
Volts (DC)	400 mV thru 400V*	Auto Ranging
Frequency	5 Hz thru 50 KHz	Auto Threshold Setting
Pulse Width	5 ms thru 2 s	Auto Threshold Setting
Inj Pulse Width	5 ms thru 2 s	
MC Dwell (60)	20 - 40 - 60 degrees	Auto Threshold Setting
MC Dwell (90)	30 - 60 - 90 degrees	Auto Threshold Setting
Duty Cycle	20 - 40 - 60 - 80 - 100%	Auto Threshold Setting
Low Amps (20)	1 - 2 - 5 - 10 – 20A	With EETA308A
Low Amps (40)	10 – 20 - 40A	With EETA308A
Vacuum	5 - 10 – 20 in Hg	Sensor specific
100 psi Pressure	10 - 25 - 50 - 100 PSI	Sensor specific
500 psi Pressure	50 - 100 - 250 - 500 PSI	Sensor specific
5000 psi Pressure	500 - 1000 - 2500 - 5000 PSI	Sensor specific

* See Safety Warnings

NOTE: Coverage based on vehicle specific systems availability and varies by model. Information current as of 9/9/2015. Subject to change without notice.

VERUS® EEMS323 - BID SPECIFICATION -

VERUS LAB SCOPE

Function	Range	Comments
Channels	1 – 4	Common Ground
Bandwidth	DC - 3 MHz	3 db point @ 3 MHz
Input Impedance	10 MΩ @ DC	All channels
	5.8 kΩ @ 3MHz	
	400 Volts	
	200 Volts	
	100 Volts	
	50 Volts	
	20 Volts	
	10 Volts	
	5 Volt	
	2 Volt	
Vdc (Full Scale) and Vac (Full Scale) Peak to Peak Voltage	1 Volt	
	500 millivolt	
	200 millivolt	
	100 millivolt	
RPM Measurement	0 – 10000 RPM	
Secondary Ignition	1 – 50 KV	Channels 1 and 2

VERUS LAB SCOPE SPECIFICATIONS BY SWEEP RATE

Sweep ¹	Channels	Data points per screen	Buffer storage/Ch	Max # Screens	Total time ²	Sample rate ³	Peak Detect ⁴
50 μs	Ch 1 only	300	524,288	1747	87.3 ms	6.0 MHz	N
100 μs	Ch 1,2 only	300	261,120	870	87.0 ms	3.0 MHz	N
200 μs	Ch 1,2,3,4	300	131,040	436	87.2 ms	1.5 MHz	N
500 μs	Ch 1,2,3,4	500	131,070	262	131 ms	1.0 MHz	N
1 ms	Ch 1,2,3,4	500	131,040	262	262 ms	500 KHz	Y
2 ms	Ch 1,2,3,4	500	131,040	262	524 ms	250 KHz	Y
5 ms	Ch 1,2,3,4	500	131,040	262	1.3 S	100 KHz	Y
10 ms	Ch 1,2,3,4	500	131,040	262	2.6 S	50 KHz	Y
20 ms	Ch 1,2,3,4	500	131,070	262	5.2 S	25 KHz	Y
50 ms	Ch 1,2,3,4	500	131,070	262	13.1 S	10 KHz	Y
100 ms	Ch 1,2,3,4	500	131,070	262	26.2 S	5 KHz	Y
200 ms	Ch 1,2,3,4	500	131,070	262	52.4 S	2.5 KHz	Y
500 ms	Ch 1,2,3,4	500	131,070	262	2.2 M	1.0 KHz	Y
1 s	Ch 1,2,3,4	500	131,070	262	4.3 M	500 Hz	Y
2 s	Ch 1,2,3,4	500	131,070	262	8.7 M	250 Hz	Y
5 s	Ch 1,2,3,4	500	131,070	262	21.8 M	100 Hz	Y
10 s	Ch 1,2,3,4	500	131,070	262	43.7 M	50 Hz	Y
20 s	Ch 1,2,3,4	500	131,070	262	87.3 M	25 Hz	Y

² Total time is equal to the sweep times the number of frames.

³ Actual sample rate for sweeps 50-200 μs. Effective sample rate for sweeps 500 μs and longer. The effective sample rate is based on the number of sample points stored to the data buffer memory over the selected time sweep. On all sweeps 500 μs and longer, the ADC samples at 1.5 MHz per channel regardless of sweep. The number of sample points is greater than the number of points needed to complete a screen. Only enough points to complete a screen are selected to be stored to the data buffer. This results in the effective sample rate being lower than the actual sample rate of 1.5MHz.

⁴ When Peak Detect is On, all samples are evaluated. The points stored to the buffer are intelligently selected to capture fast events that might be missed at slower effective sample rates. Peak Detect will capture fast changes at an effective sample rate of 1.5MHz.