BID SPECIFICATION

Snap-on® VERUS® PRO
Diagnostic & Information System

PRODUCT FEATURES
- Modular diagnostic & information system
- ShopStream™ integrated diagnostic software suite
- 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
- Keyless, wireless scan module

DISPLAY TABLET
- 10.4″ Color, 1024x600 resolution backlit touchscreen LCD
- 1.6 GHz Intel ATOM processor
- 250 GB internal HDD
- Internal audio microphone and speaker
- Audio output port, auxiliary port
- Docking connector for VGA output and charging
- Serial and 2 USB ports for accessories (printer, keyboard, mass storage devices, gas analyzer, pressure probes)
- 802.11b/g wireless and Bluetooth® 2.0 communication

SYSTEM & USER INTERFACE
- Windows®-embedded Standard operating system
- Open system allows user-installed software
- Application multitasking capability
- User-specified display options
- Touchscreen navigation
- On-screen virtual keyboard

STANDARD ACCESSORIES
- Scan module with wireless interface to display tablet
- Scope module with USB interface to display tablet
- Vehicle communication interface cable, adapters for 1996-newer US Domestic, Asian & OBD-II vehicles
- OBD-I adapters for US and Asian vehicles
- 4-Channel shielded, color-coded scope leads
- 110VAC adapter/charger
- Removable Lithium-ion battery pack
- Blow-molded storage case
- Touchscreen stylus

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 sixteen live data parameters (PIDs) simultaneously in graphing mode;
- Adjustable sweep; Min/Max capture in graphing mode
- Includes functional tests, bidirectional controls and reset/relearns
- Save screen captures and scanner movies
- Software coverage for 1980-newer US Domestic, 1983-newer Asian Import and optional 1992-newer European vehicles
- Optional European vehicle software with enhanced coverage for Audi, BMW, Jaguar, Land Rover, MINI, Mercedes, SMART, Volvo and VW

GLOBAL OBD-II VEHICLE COMMUNICATION SOFTWARE
- Communicates with 1995 and newer EOBD/OBD-II compatible vehicles
- Automatically establishes communication with the appropriate vehicle protocol

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 1980 – 2012
- 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 Brake Control, HVAC, Suspension, Keyless entry, Climate control Diagnostics
- 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
- ABS Diagnostics and Brake Bleeding
- Dash and Rear Integration Modules
- 2004 and newer Key Fob Programming
- HVAC codes, data, functional test, calibrations
- Air suspension system codes, data, functional test

FORD VEHICLE COMMUNICATION SOFTWARE 1981 – 2012

- 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
- OEM Sub codes
- 6.4L Diesel Particulate Filter (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 diesels
- 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 – 2012

- Enhanced OBD-I, OBD-II & Generic OBD-II modes
- Engine, Transmission, ABS, Airbag, Body, Occupant Classification Module, TPMS, Electronic shifter, HVAC, Steering angle sensor, ESP, Door Modules, Park Assist, Central Gateway, Instrument Panel, Transfer Case Diagnostics
- 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 incl. Kelsey-Hayes, Teves, Bendix
- Body ATM Tests, incl. Door Locks, Lights, Chimes, Horn, Wipers, Sunroof and Overhead Module
- TPMS including sensor ID function

ASIAN VEHICLE COMM SOFTWARE 1983 – 2012

- Enhanced OBD-I, OBD-II & Generic OBD-II modes
- In-depth Engine (including Hybrid), Transmission, Airbag & ABS, HVAC, Instrument, TPMS, Cruise Control
- Coverage for popular Asian Import vehicle makes: Acura, Daihatsu, Honda, Hyundai, Infiniti, Isuzu, Kia, Lexus, Mazda, Mitsubishi, Nissan, Scion, Subaru, Suzuki, Toyota
- 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 – 2011
- Asian Imports 1983 – 2011
- Troubleshooter procedures that verify a repair is completed and fixed properly
- Exclusive experience-based information
- Over 6.8 Million VIN-specific Troubleshooter Tips
- Exclusive VIN-Specific troubleshooting and systems code tips, no-code tips, no-start tips, 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 2011 model year
- Asian import 1983 – 11
- 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 2011 models
- Symptom-based tips for 2011 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 2/27/2013. Subject to change without notice.

LAB SCOPE SPECIFICATIONS

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

Note: Also see SCOPE/METER 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

Display Tablet
- Battery: Lithium-ion battery pack included
- Dimensions: 13.2"W x 8.1"H x 2.4"D
- Weight: 5.1 lbs – with battery

Scan Module
- Dimensions: 8.0"L x 1.7"H x 3.8"W
- Weight: .9 lbs

OPTIONAL ACCESSORIES – SCAN TOOL

- Domestic/Asian OBD-I Adapter Kit 2 - EAK0288B04B
- European Vehicle Software Activation - EESP323E (1992–newer BMW, 1992– newer VW/Audi, 1992– newer Mercedes-Benz, 2000-newer Jaguar, 2000- newer Land Rover, 1996- newer MINI, 2000- newer Volvo, 2005-newer SMART)
- European Vehicle Adapter Kit – EAK0301B07B
- Adapter for Kia ABS & Airbag – EAA0355L92A

OPTIONAL ACCESSORIES – IGNITION ADAPTERS

- Ignition Scope Lead Set - EAK0294B09A
- EETA309A15 - Multiple Ignition Lead Module

Ignition adapters
- 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 – DISPLAY TABLET

- Charging/Docking Station w/USB Hub - EAA0365L04A
- Silicone Protective Skin - Black - EAC0101L70A1
- Silicone Protective Skin - Blue - EAC0101L70A2
- Silicone Protective Skin - Red - EAC0101L70A3
- Portable 5-Gas Analyzer - EEEA305APC

OPTIONAL ACCESSORIES – LAB SCOPE/METER

- Precision Low Amp Current Probe - EETA308D
- Pressure Transducer "Y" Adapter Cable – EAX24B40A
- Split Lead Adapter - EEMS301A05
- 100 PSI Pressure/Vacuum Transducer w/cable - EEPV302AL
- 500 PSI Pressure/Transducer w/cable - EEPV302AT
- 5000 PSI Pressure/Transducer w/cable - EEPV302AH
- Transducer Extension Cable - EAX0024B30A
- Waveform Emulation Demo Board - EESX306A

VERUS® PRO EEMS327
- BID SPECIFICATION -

SCOPE/METER SYSTEM SPECIFICATIONS

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 MΩ @ DC	All channels
	5.8 kΩ @ 3MHz	
V dc (Full Scale)	75 V maximum	
V ac (Full Scale) Peak to Peak Voltage	50 V maximum	

DIGITAL METER OHMS AND DIODE CONTINUITY TESTS

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

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 EETA308D
Low Amps (40)	10 – 20 - 40A	With EETA308D
Low Amps (60)	10 – 20 – 40 – 60A	With EETA308D
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 in VERUS PRO user manual

VERUS® PRO EEMS327
- BID SPECIFICATION -

LAB SCOPE

Function	Range	Comments
Channels	1 – 4	Common Ground
Bandwidth	DC - 3 MHz	3 db point @ 3 MHz
Input Impedance	10 MΩ @ DC 4 kΩ @ 3MHz	All channels
Vdc (full scale) Do not test greater than 75Vdc Vac (full scale) Peak to Peak Voltage Do not test greater than 50Vdc (rms)	400 Volts 200 Volts 100 Volts 50 Volts 20 Volts 10 Volts 5 Volt 2 Volt 1 Volt 500 millivolt 200 millivolt 100 millivolt	
Secondary Ignition	1 – 50 KV	Channels 1 and 2

LAB SCOPE SPECIFICATIONS BY SWEEP RATE

Sweep	Channels	Data points per screen	Buffer storage/Ch	Max # Screens	Total time [1]	Sample rate [2]	Peak Detect [3]
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
250 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
250 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

* See Safety Warnings in VERUS PRO user manual

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

2 - 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.

3 - 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.