



## Snap-on® VERDICT Diagnostic & Information System

### PRODUCT FEATURES

- Modular diagnostic & information system
- Expandable platform with upgradeable software
- 2-channel lab 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

### D7 Display Device

- Microsoft Windows embedded operating system
- Windows application multitasking
- 7" Color, 1024x600 resolution backlit display
- Touchscreen navigation and onscreen virtual keyboard
- 1 GB RAM; 1.1 GHz Processor
- 60 GB internal HDD
- Internal digital camera, audio microphone and speaker
- USB, Serial, Audio, Auxiliary ports
- Ethernet port, and 802.11b/g wireless Ethernet
- Class-1 Bluetooth® 2.0
- Removable Lithium-ion battery pack
- Height: 6.8 inches (173 mm)
- Width: 9.9 inches (252 mm)
- Depth: 1.8 inches (46 mm)
- Weight: 2.9 lbs (1.3 kg)

### S3 Scan Module

- Class-1 Bluetooth 2.0 connection to D7 display device
- Height: 8.0 inches (204 mm)
- Width: 3.8 inches (97 mm)
- Depth: 1.7 inches (42 mm)
- Weight 0.9 lbs (0.4 kg)

### M2 Meter

- Standalone operation or Class-1 Bluetooth 2.0 connection to D7 Display Device
- Color graphing display
- 2-channel lab scope and digital/graphing meter
- Sample rate 20 megasamples/second
- Scale range: 0-100mV to 0-1000VDC
- Sweep rate: 50 microseconds to 20 seconds (60 min in GMM mode)
- VDC, VAC, ohms, capacitance, frequency, duty cycle, pulse width
- CATIII and CATIV certified
- Rechargeable NiMH battery pack
- Height: 9.1 inches (232 mm)
- Width: 4.3 inches (108 mm)
- Depth: 2.0 inches (51 mm)
- Weight 1.9 lbs (0.9 kg)

## VERDICT® EEMS324

# BID SPECIFICATION

### STANDARD ACCESSORIES

- Vehicle cable/adaptor for 1996-newer vehicles
- 2 shielded scope leads and alligator clips
- 110VAC adapter/charger for D7 Display Device
- 110VAC adapter/charger for M2 Meter
- Touchscreen stylus
- USB cable
- Carrying 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 bi-directional controls
- Save screen captures and scanner movies
- Software with enhanced coverage for 1980-newer US Domestic and Asian Import 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

- Covers 1995-newer 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

#### 1980 – 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 Brake 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

# VERDICT® EEMS324

## - BID SPECIFICATION -

- 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 & Door 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, 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
- 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
- OEM Sub codes
- 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 – 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 COMMUNICATION SOFTWARE 1983 – 2015

- 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
- Parktronic (park assist)

### ASIAN VEHICLE COMMUNICATION 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

# VERDICT® EEMS324

## - BID SPECIFICATION -

- 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
- 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

### 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
- 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
- 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 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 SPECIFICATIONS

- NOTE: Also see SYSTEM SPECIFICATIONS at end of this document
- Lab Scope displays two color-coded waveforms on screen in real time, with digital voltage readout
- Manual and automatic configuration for each channel
- Snapshot function: Capture data saved into 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 waveform to for easier viewing
- Automatically pre-configures the vertical scale
- Select factory preset screens or define and save custom setups for frequently used tasks
- User selectable peak detect captures high-speed signals

### DIGITAL & GRAPHING MULTIMETER

#### SPECIFICATIONS

- Auto scaling, high-impedance multimeter
- 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

# VERDICT® EEMS324 - BID SPECIFICATION -

## **OPTIONAL ACCESSORIES – SCAN TOOL**

- Domestic/Asian OBD-I Adapter Kit 1 – EAK0301B08A
- Domestic/Asian OBD-I Adapter Kit 2 – EAK0288B04B
- European Vehicle Software Activation – EESP323E  
1986 – later BMW, 1991 – later VW/Audi, 1992 – later Mercedes-Benz, 1996 -09 Land Rover, 2000 – 09 Volvo
- European Vehicle Adapter Kit – EAK0301B07B
- KIA Adapter for ABS & Airbag – P/N EAA0355L92A

## **OPTIONAL ACCESSORIES – VERUS PLATFORM**

- Extended Life Battery Pack – EAA0365L06A
- Docking Station w/video & USB connectors – EAA0365L01A
- Screen Protectors (3 pack) - EAC0107L03A5

## **OPTIONAL ACCESSORIES - LAB SCOPE/METER**

- Low Amp Current Probe – EETA308D
- Waveform Emulation Demo Board – EESX306A

## **OPTIONAL ACCESSORIES – 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

# VERDICT® EEMS324 - BID SPECIFICATION -

## VERDICT SYSTEM SPECIFICATIONS

<b>VERDICT M2 MULTIMETER</b>		
<b>Function</b>	<b>Range</b>	<b>Comments</b>
Channels	2	Common Ground
Input Impedance	10 MΩ @ DC	
VDC (Full Scale)	1000 V maximum	
VAC (Full Scale)	600 Vrms	
<b>VERDICT M2 DIGITAL METER OHMS AND DIODE CONTINUITY TESTS</b>		
<b>Function</b>	<b>Range</b>	<b>Comments</b>
Ohms	40 Ω – 40 MΩ	Fixed scale or Auto range
Diode Test	2.5 V Scale	Test voltage is 3.0 VDC
Capacitance Test	40nf – 400uf	Fixed scale or Auto range
<b>VERDICT M2 GRAPHING MULTIMETER</b>		
<b>Function</b>	<b>Range</b>	<b>Comments</b>
Input Channels	1	
Input Impedance	10 Megohm	
Volts (DC)	0-100 mV to 0-1000V	Fixed scales
Frequency	5 Hz thru 50 KHz	Fixed scales
Pulse Width	5 ms thru 2 S	Fixed scales
Duty Cycle	Up to 100%	Auto Threshold Setting/Adjustable
Low Amps	1 - 2 - 5 - 10 – 20 - 40A	With optional EETA308D

See Safety Warnings in User Manual

# VERDICT® EEMS324 - BID SPECIFICATION -

## VERDICT M2 LAB SCOPE

Function	Range	Comments
Channels	1 – 2	Common Ground
Bandwidth	DC - 3 MHz	3 db point @ 3 MHz
Input Impedance	10 MΩ	All channels
	1000 Volts	
	500 Volts	
	200 Volts	
	100 Volts	
	50 Volts	
VDC (Full Scale) and	20 Volts	
VAC (Full Scale)	10 Volts	
Peak to Peak Voltage	5 Volt	
	2 Volt	
	1 Volt	
	500 millivolt	
	200 millivolt	
	100 millivolt	

## VERDICT M2 LAB SCOPE SPECIFICATIONS BY SWEEP RATE

Sweep	Channels	Data points per screen Standalone/Integrated Operation	Sample rate	Peak Detect
*25 us	Ch1, 2	*290	20Ms/S	**Y
50 μs	Ch1, 2	290 / 580	20Ms/S	**Y
100 μs	Ch1, 2	290 / 580	20Ms/S	Y
200 μs	Ch1, 2	290 / 580	20Ms/S	Y
500 μs	Ch1, 2	290 / 580	20Ms/S	Y
1 ms	Ch1, 2	290 / 580	20Ms/S	Y
2.5 ms	Ch1, 2	290 / 580	20Ms/S	Y
5 ms	Ch1, 2	290 / 580	20Ms/S	Y
10 ms	Ch1, 2	290 / 580	20Ms/S	Y
25 ms	Ch1, 2	290 / 580	20Ms/S	Y
50 ms	Ch1, 2	290 / 580	20Ms/S	Y
100 ms	Ch1, 2	290 / 580	20Ms/S	Y
200 ms	Ch1, 2	290 / 580	20Ms/S	Y
500 ms	Ch1, 2	290 / 580	20Ms/S	Y
1 s	Ch1, 2	290 / 580	20Ms/S	Y
2.5 s	Ch1, 2	290 / 580	20Ms/S	Y
5 s	Ch1, 2	290 / 580	20Ms/S	Y
10 s	Ch1, 2	290 / 580	20Ms/S	Y
**20 S	Ch1, 2	**580	20Ms/S	Y

\* Stand alone operation only

\*\* Integrated operation with D7 Display Device only

# VERDICT® EEMS324 - BID SPECIFICATION -

## VERDICT LAB SCOPE SPECIFICATIONS BY SWEEP RATE Verdict/M2

Sweep <sup>1</sup>	Channels	Data points per screen	Buffer storage/Ch	Max # Screens	Total time <sup>1</sup>	Sample rate <sup>2</sup>	Peak Detect <sup>3</sup>
50 µs	Ch 1,2	580	262,144	451	22.5ms	11.6MHz	N
100 µs	Ch 1,2	580	262,144	451	45ms	5.8MHz	N
200 µs	Ch 1,2	580	262,144	451	90ms	2.9MHz	Y
500 µs	Ch 1,2	580	262,144	451	225ms	1.16MHz	Y
1 ms	Ch 1,2	580	262,144	451	450ms	580KHz	Y
2 ms	Ch 1,2	580	262,144	451	900ms	290KHz	Y
5 ms	Ch 1,2	580	262,144	451	2.25S	116KHz	Y
10 ms	Ch 1,2	580	262,144	451	4.5S	58KHz	Y
20 ms	Ch 1,2	580	262,144	451	9S	29KHz	Y
50 ms	Ch 1,2	580	262,144	451	22.5S	11.6KHz	Y
100 ms	Ch 1,2	580	262,144	451	45S	5.8KHz	Y
200 ms	Ch 1,2	580	262,144	451	90S	2.9KHz	Y
500 ms	Ch 1,2	580	262,144	451	3.7M	1.16KHz	Y
1 s	Ch 1,2	580	262,144	451	7.5M	580Hz	Y
2 s	Ch 1,2	580	262,144	451	15M	290Hz	Y
5 s	Ch 1,2	580	262,144	451	37M	116Hz	Y
10 s	Ch 1,2	580	262,144	451	75M	58Hz	Y
20 s	Ch 1,2	580	262,144	451	150M	29Hz	Y

<sup>1</sup> Total time is equal to the sweep times the number of screens.

<sup>2</sup> Effective sample rate – 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 the ADC samples at 20 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. When Peak Detect is Off, no preference is given to any data point. This results in the effective sample rate being lower than the actual sample rate of 20MHz.

<sup>3</sup> When Peak Detect is On, all sample points are evaluated. The points stored to the buffer are intelligently selected to capture fast events that might be missed at slower sample rates.

**VERDICT® EEMS324  
- BID SPECIFICATION -**

**M2 Standalone**

<b>Sweep<sup>1</sup></b>	<b>Channels</b>	<b>Data points per screen</b>	<b>Buffer storage/Ch</b>	<b>Max # Screens</b>	<b>Total time<sup>1</sup></b>	<b>Sample rate<sup>2</sup></b>	<b>Peak Detect<sup>3</sup></b>
25 $\mu$ s	Ch 1,2	290				11.6MHz	N
50 $\mu$ s	Ch 1,2	290				5.8MHz	N
100 $\mu$ s	Ch 1,2	290				2.9MHz	Y
250 $\mu$ s	Ch 1,2	290				1.16MHz	Y
500 $\mu$ s	Ch 1,2	290				580KHz	Y
1 ms	Ch 1,2	290				290KHz	Y
2.5 ms	Ch 1,2	290				116KHz	Y
5 ms	Ch 1,2	290				58KHz	Y
10 ms	Ch 1,2	290				29KHz	Y
25 ms	Ch 1,2	290				11.6KHz	Y
50 ms	Ch 1,2	290				5.8KHz	Y
100 ms	Ch 1,2	290				2.9KHz	Y
250 ms	Ch 1,2	290				1.16KHz	Y
500 ms	Ch 1,2	290				580Hz	Y
1 s	Ch 1,2	290				290Hz	Y
2.5 s	Ch 1,2	290				116Hz	Y
5 s	Ch 1,2	290				58Hz	Y
10 s	Ch 1,2	290				29Hz	Y