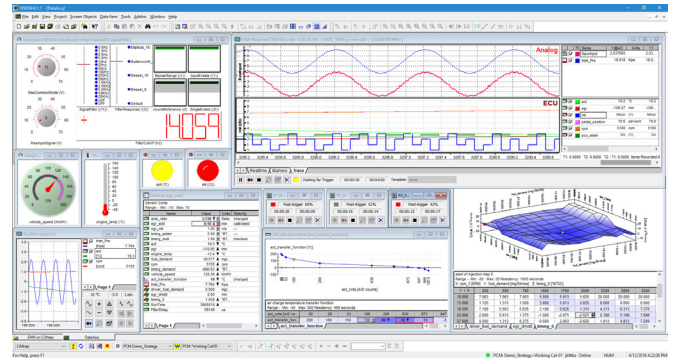


VISION Calibration and Data Acquisition Software Toolkits

ATI VISION Calibration and Data Acquisition software is modular in design based. The modularity of VISION toolkits provides the ability to customize VISION based on a desired level of functionality. VISION toolkits are task based feature groups that are based on customer usage models in the calibration and data acquisition fields.

A VISION toolkit configuration can range from a single toolkit to view and analyze recorded data to a full ECU calibration solution with Rapid Prototyping features. Cost effective packages can easily be created based on end user need.



This document contains the available VISION toolkits as of VISION 6.0.

VISION Toolkits and Descriptions:

Part Number	Name	Description
Base VISION		
NONE	VISION Base	<ul style="list-style-type: none"> ✓ Build device tree (All devices can be added to the tree, but cannot go online with any particular device unless the necessary toolkit is enabled). ✓ Configure ATI hardware. ✓ Acquire data from ATI Data Acquisition hardware into VISION recorders and screen objects (Not ECU Interfaces unless the appropriate ECU Interface Toolkit is enabled). ✓ View data on a Data List (This is the only screen object available to view data). ✓ CAN Trace object (Only ATI branded CAN Interface unless VISION Third Party CAN Interface Toolkit is enabled). ✓ Configure Network Hub Logger functionality (Limited to only ATI Data Acquisition items or CAN objects unless ECU Interface Toolkits are present to enable configuring acquisition of ECU data items). ✓ Retrieve data files from Network Hub Logger (Including attaching a DBC file upon retrieving of the files to convert CAN messages to signals). ✓ Record data in basic recorders from ATI Data Acquisition hardware (Stripchart is not available, cannot record data from ECU Interfaces unless the appropriate ECU Interface Toolkit is enabled). ✓ View recorder files. All REC file viewer capabilities are enabled except for saving the file, applying templates, adding calculated channels, importing non REC file formats, and exporting to non REC file formats. Basically, the user should be able to see any REC file provided but they cannot alter it in any permanent way. (The Rec File Viewer will have a "Read Only" indication in the title bar to warn the user that they will not be able to save their work. In addition, if the user tries to save their work, a message will be displayed that they do not have the toolkit necessary to save their work). ✓ Add a CAN Monitor Device (Only ATI branded CAN interface unless the VISION Third Party CAN Interface toolkit is enabled).
Data Acquisition Toolkits		
152-0007	VISION Data Acquisition (DAQ)Toolkit	<ul style="list-style-type: none"> ✓ View data in Data Acquisition screen objects. (Gauges, LED, LED Array, Thermometer, Dashboard). ✓ Stripchart Recorder is enabled. ✓ Can Export MDF and ASCII files.

VISION Calibration and Data Acquisition Toolkits

VISION Toolkits and Descriptions Continued:

Part Number	Name	Description
Data Acquisition Toolkits Continued		
152-0013	VISION Third Party I/O Interface Toolkit	<ul style="list-style-type: none"> ✓ Adds the ability to acquire and record data from supported Third Party Data Acquisition hardware. <i>Requires 152-0007 VISION Data Acquisition Toolkit</i>
152-0019	VISION J1939 Monitor (DTC Support) Toolkit	<ul style="list-style-type: none"> ✓ Add the J1939 Monitor device and DTC screen object.
152-0022	VISION SoMat® DAQ Interface Toolkit	<ul style="list-style-type: none"> ✓ Adds the ability to acquire and record data from SoMAT® Data Acquisition hardware. <i>Requires 152-0007 VISION Data Acquisition Toolkit</i>
152-0026	VISION Simulation Data Acquisition Toolkit	<ul style="list-style-type: none"> ✓ Ability to acquire and record data from non-real time systems. <i>Requires 152-0007 VISION Data Acquisition Toolkit</i>
152-0030	VISION VETS Data Acquisition Toolkit	<ul style="list-style-type: none"> ✓ Enable data acquisition between the Horiba VETS system and VISION.
152-0032	VISION Kistler® KiBox DAQ Toolkit	<ul style="list-style-type: none"> ✓ Adds the ability to acquire and record data from Kistler KiBox® Combustion Analyzer. <i>Requires 152-0007 VISION Data Acquisition Toolkit</i>
152-0033	VISION CAN OBD Toolkit	<ul style="list-style-type: none"> ✓ Enables OBD device. ✓ Enables the acquisition of OBD based data. ✓ Enables all of the OBD screen objects, including those to configure the data acquisition of the OBD device.
152-0035	VISION AVL IndiCom® Data Acquisition Toolkit	<ul style="list-style-type: none"> ✓ Adds the ability to acquire and record data from AVL IndiCom Combustion Analyzer. <i>Requires 152-0007 VISION Data Acquisition Toolkit</i>
152-0037	VISION Enhanced Diagnostics Toolkit	<ul style="list-style-type: none"> ✓ Extends VISION diagnostics capabilities with additional features including XML APIs and WWH-OBD functionality. <i>Requires 152-0033 VISION CAN OBD Toolkit</i> <i>Note: API support requires the 152-0010 VISION Scripting and API Toolkit</i>
Calibration Toolkits		
152-0008	VISION Calibration Toolkit	<ul style="list-style-type: none"> ✓ View/Edit data in calibration screen objects. (2D/3D maps, scroll bar, dial, switch). ✓ Create/Edit ATI Calibration files. ✓ Create/Edit ASAM CDF and CDFx files. ✓ Use Calibration Manager. ✓ Import/Export CDF and CDFx files . ✓ Create VST file (Importing an ATI ROB file is supported). Should support using strategy presets file during VST file creation.
ECU Interface Toolkits		
152-0018	VISION Third Party Universal ECU Interface Toolkit	<ul style="list-style-type: none"> ✓ Adds support for Third Party ECU hardware interfaces (including some xETK proprietary functions) <i>Requires</i> <i>152-0020 VISION Universal ECU Interface Monitoring Toolkit</i> <i>152-0021 VISION Universal ECU Interface Calibration Toolkit</i> <i>152-0034 VISION Universal ECU Interface Flashing Toolkit</i>
152-0020	VISION Universal ECU Interface Monitoring Toolkit	<ul style="list-style-type: none"> ✓ Adds ECU Connectivity via supported software protocols and hardware interfaces – Data Acquisition Only. ✓ Create VST file (Importing an ATI ROB file is supported). This should support using strategy presets file during VST file creation.
152-0021	VISION Universal ECU Interface Calibration Toolkit	<ul style="list-style-type: none"> ✓ Adds the ability to calibrate ECU via supported software protocols and hardware interfaces. <i>Requires 152-0020 VISION Universal ECU Interface Monitoring Toolkit</i>
152-0034	VISION Universal ECU Interface Flashing Toolkit	<ul style="list-style-type: none"> ✓ Adds ability to flash ECU via supported software protocols and hardware interfaces. <i>Requires 152-0020 VISION Universal ECU Interface Monitoring Toolkit (Flashing limited to Base Calibration)</i> <i>Optional 152-0021 VISION Universal ECU Interface Calibration Toolkit (Enables flashing of attached calibration)</i>

VISION Calibration and Data Acquisition Toolkits

VISION Toolkits and Descriptions Continued:

Part Number	Name	Description
Other Toolkits		
152-0010	VISION Scripting and API Toolkit	<ul style="list-style-type: none"> ✓ Enables use of Horizon Scripting. ✓ Enables use of API. ✓ Enables ASAP3 communications.
152-0011	VISION Data Analysis and Viewer Toolkit	<ul style="list-style-type: none"> ✓ Adds Post Analysis functionality (calculated channels, etc...). ✓ Advanced recorder file viewing (cursors, overlays, etc...). ✓ Import/Export MAT, HDF, CSV and REC data files. ✓ Wizard for importing ASCII files. <p><i>Required toolkit for both the VISION Rec Viewer and VISION Data Analyzer (VDA) post analysis tools</i></p>
152-0012	VISION Third Party CAN Interface Toolkit	<ul style="list-style-type: none"> ✓ Enable third party CAN interfaces (including Kvaser).
152-0023	VISION AVL DRIVE™ Interface Toolkit	<ul style="list-style-type: none"> ✓ Enables communications between VISION and AVL-DRIVE™. <p><i>Only required for customers using AVL-Drive™ versions 3.7 and earlier AVL-Drive™ 3.8 and newer require the 152-0010 VISION Scripting and API Toolkit</i></p>
152-0025	VISION AVL Creta™ Connection Toolkit	<ul style="list-style-type: none"> ✓ Enables exchange of data between VISION and AVL Creta™. <p><i>Requires 152-0008 VISION Calibration Toolkit</i></p>
152-0028	VISION Import/Export Toolkit	<ul style="list-style-type: none"> ✓ Create VST files using import of A2L file. ✓ Import and Export A2L, DCM, Vector, MDF Log, MatLab (CAL) and VAT2000 files. <p><i>Requires one of the following toolkits: 152-0008 VISION Calibration Toolkit 152-0020 VISION Universal ECU Interface Monitoring Toolkit</i></p>



VISION Calibration and Data Acquisition Toolkits

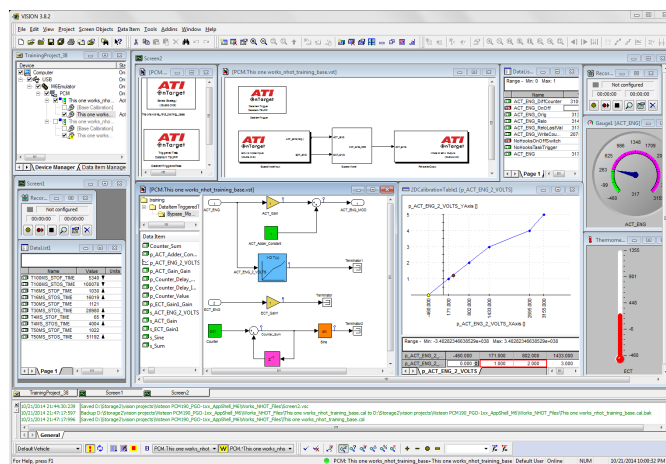
VISION Toolkit Dependency:

Part Number	Name	152-0200 VISION Standard Calibration Package	152-0201 VISION Standard Calibration Package w/Third Party I/O	152-0208 VISION Data Acquisition Package	152-0209 VISION ECU Flashing Package	152-0210 Analysis, Acquisition, and Calibration Package
Base VISION						
NONE	VISION Base	✓	✓	✓	✓	✓
Data Acquisition Toolkits						
152-0007	VISION Data Acquisition Toolkit	✓	✓	✓		✓
152-0013	VISION Third Party I/O Interface Toolkit		✓			
152-0019	VISION J1939 Monitor (with DTC Support) Toolkit					
152-0022	VISION SoMat® Data Acquisition Interface Toolkit					
152-0026	VISION Simulation Data Acquisition Toolkit					
152-0030	VISION VETS Data Acquisition Toolkit					
152-0032	VISION Kistler® KiBox Data Acquisition Toolkit					
152-0033	VISION CAN OBD Toolkit					
152-0035	VISION AVL IndiCom® Data Acquisition Toolkit					
152-0037	VISION Enhanced Diagnostics Toolkit					
Calibration Toolkits						
152-0008	VISION Calibration Toolkit	✓	✓			✓
ECU Interface Toolkits						
152-0018	VISION Third Party Universal ECU Interface Toolkit					
152-0020	VISION Universal ECU Interface Monitoring Toolkit	✓	✓	✓	✓	✓
152-0021	VISION Universal ECU Interface Calibration Toolkit	✓	✓		✓	✓
152-0034	VISION Universal ECU Interface Flashing Toolkit	✓	✓		✓	
Other Toolkits						
152-0010	VISION Scripting and API Toolkit	✓	✓			
152-0011	VISION Data Analysis and Viewer Toolkit	✓	✓	✓		✓
152-0012	VISION Third Party CAN Interface Toolkit	✓	✓	✓	✓	✓
152-0023	VISION AVL DRIVE™ Interface Toolkit					
152-0025	VISION AVL CRETA™ Connection Toolkit					
152-0028	VISION Import/Export Toolkit	✓	✓	✓		✓

No-Hooks/OnTarget Rapid Prototyping Software Toolkits

ATI offers an innovative, patented software-centric method for rapid prototyping ECUs that functions with our VISION Calibration and Data Acquisition Software to make a complete development solution. The base product, No-Hooks, allows users to bypass control variables in the ECU's RAM (that are normally only viewable or measurable) with calibratable parameters. Adding the Advanced No-Hooks (ANH) Toolkit extends the base No-Hooks functionality to bypass global ECU variables with user defined programmable functions without the need for a compiler. The OnTarget toolkits add another level of prototyping to bypass ECU control variables with model outputs inline with the production ECU executables. In all cases, the bypasses are implemented without any modifications to the ECU source code and the new algorithms are run on the production-intent ECU.

VISION offering are not only efficient with regards to functionality but also cost. Each user can purchase only the functionality needed in the form of toolkits. As requirements change, add or remove toolkits.



No-Hooks/OnTarget Toolkit Packages:

Part Number	Name & Description
Packages	
152-0202	VISION No-Hooks PPC Package - Includes 152-0007, 152-0008, 152-0010, 152-0011, 152-0012, 152-0013, 152-0020, 152-0021, 152-0028, 152-0034, and 152-0103
152-0203	VISION No-Hooks Tricore Package - Includes 152-0007, 152-0008, 152-0010, 152-0011, 152-0012, 152-0013, 152-0020, 152-0021, 152-0028, 152-0034, and 152-0106
152-0204	VISION No-Hooks PPC + Tricore Package - Includes 152-0007, 152-0008, 152-0010, 152-0011, 152-0012, 152-0013, 152-0020, 152-0021, 152-0028, 152-0034, 152-0103, and 152-0106
152-0205	VISION Rapid Prototyping PPC Package - Includes 152-0007, 152-0008, 152-0010, 152-0011, 152-0012, 152-0013, 152-0020, 152-0021, 152-0028, 152-0034, 152-0100, 152-0103, and 152-0104
152-0206	VISION Rapid Prototyping Tricore Package - Includes 152-0007, 152-0008, 152-0010, 152-0011, 152-0012, 152-0013, 152-0020, 152-0021, 152-0028, 152-0034, 152-0100, 152-0106, and 152-0107
152-0207	VISION Rapid Prototyping PPC + Tricore Package - Includes 152-0007, 152-0008, 152-0010, 152-0011, 152-0012, 152-0013, 152-0020, 152-0021, 152-0028, 152-0034, 152-0100, 152-0103, 152-0104, 152-0106, and 152-0107

No-Hooks/OnTarget Software Toolkits

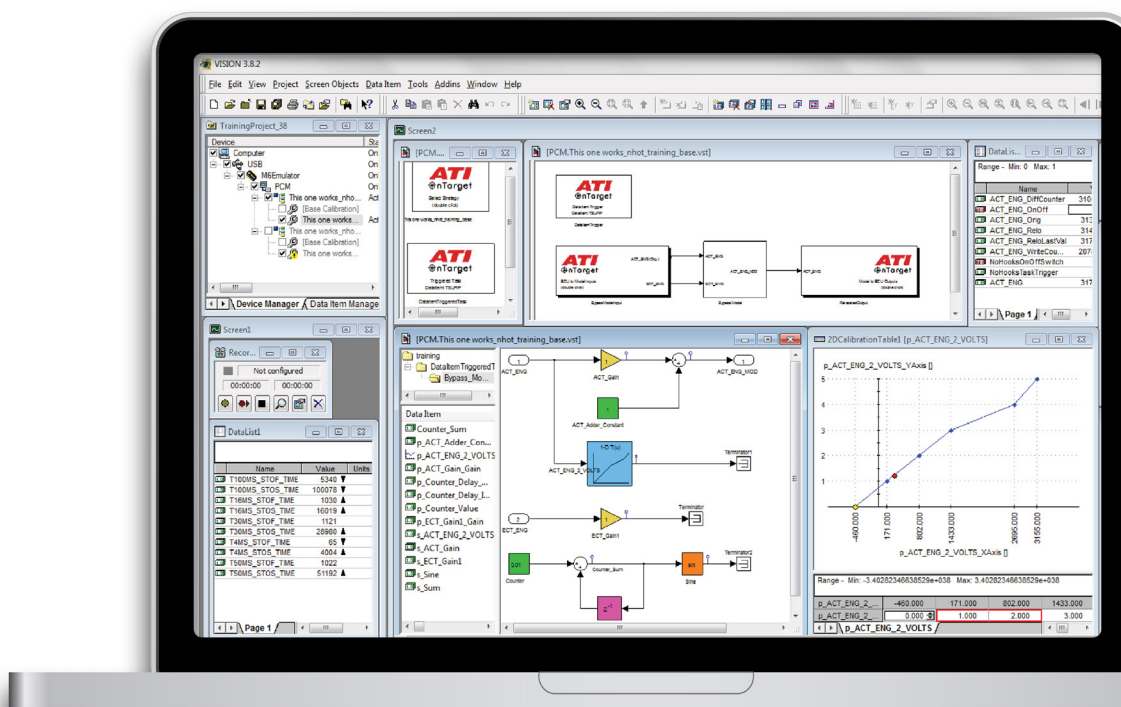
No-Hooks/OnTarget Toolkits and Descriptions:

Part Number	Name	Description
General Kits		
152-0100	VISION Browser for Simulink® Models	<ul style="list-style-type: none"> ✓ Adds the ability to interact with data on subsystem level graphical views of the OnTarget Simulink® models within VISION. ✓ Adds the ability to display signal values and calibrate parameters directly on the images of the model. <i>A recommended Add-On to be paired with the individual xPCTarget, or Model Base Calibration toolkits</i>
152-0101	VISION xPC Target™ Interface Toolkit	<ul style="list-style-type: none"> ✓ Adds the ability to measure and calibrate data in a model running on a Simulink® xPC Target™ device with VISION using an Ethernet connection. Includes the ATI xPC. ✓ Includes Ethernet Toolkit Simulink® block library.” so is same as that for the description of VISION OnTarget Toolkits (152-xxxx) <i>Requires 152-0010 VISION Scripting and API Toolkit</i>
152-0121	VISION NHOT File Exporter Non-Perpetual Toolkit License	<ul style="list-style-type: none"> ✓ Adds the ability to export new A2L and memory image files containing the complete No-Hooks and OnTarget data items. Requires a base strategy A2L file as a template. <i>Requires 152-xxxx VISION XXXX No-Hooks Toolkit</i>
152-0130	VISION Advanced No-Hooks Toolkit	<ul style="list-style-type: none"> ✓ Adds the ability to bypass global ECU variables with user defined programmable functions, all without access to the ECU source code nor the need for a compiler. <i>Requires a specific VISION xxxx No-Hooks Toolkit, where xxxx is the CPU type</i> <i>Currently only the TriCore (using TRICORE16 No-Hooks), PowerPC (using BOOKE No-Hooks), RH850, and VLE Processor types are supported</i>
VISION No-Hooks Toolkits (152-xxxx)		<ul style="list-style-type: none"> ✓ Adds the ability to bypass global ECU variables with a simple calibration parameter, all without access to the ECU source code. <i>(This functionality is common between all VISION No-Hooks Toolkits. Additional functionality for each unique toolkit is listed below).</i> <i>Requires 152-0010 VISION Scripting and API Toolkit</i>
VISION OnTarget Toolkits (152-xxxx)		<ul style="list-style-type: none"> ✓ Extends the No-Hooks functionality by adding the ability to bypass global ECU variables with outputs from a Simulink® model. ✓ Includes the ATI OnTarget Toolkit Simulink® block library. <i>(This functionality is common between all VISION OnTarget Toolkits. Additional functionality for each unique toolkit is listed below).</i>
NXP		
152-0103	VISION PPC/eSys No-Hooks Toolkit	<ul style="list-style-type: none"> ✓ VISION No-Hooks Toolkit for the Freescale (Motorola) PPC/eSys CPU targets (Book-E instruction set only, non VLE).
152-0104	VISION PPC/eSys OnTarget Toolkit	<ul style="list-style-type: none"> ✓ VISION OnTarget Toolkit for the Freescale (Motorola) PPC/eSys CPU targets. <i>(Book-E instruction set only, non VLE)</i> <i>Requires 152-0103 VISION PPC/eSys No-Hooks Toolkit</i>
152-0125	VISION AVL Creta™ Connection Toolkit	<ul style="list-style-type: none"> ✓ VISION No-Hooks Toolkit for the Freescale eSys CPU targets using VLE.
152-0126	VISION eSys VLE OnTarget Toolkit	<ul style="list-style-type: none"> ✓ VISION OnTarget Toolkit for the Freescale eSys CPU targets using VLE. <i>(VLE instruction set only, not Book-E)</i> <i>Requires 152-0125 VISION eSys VLE No-Hooks Toolkit</i>
Infineon		
152-0106	VISION TriCore No-Hooks Toolkit	<ul style="list-style-type: none"> ✓ VISION No-Hooks Toolkit for the Infineon Tricore CPU target.
152-0107	VISION TriCore OnTarget Toolkit	<ul style="list-style-type: none"> ✓ VISION OnTarget Toolkit for the Infineon Tricore CPU target. <i>Requires 152-0106 VISION Tricore No-Hooks Toolkit</i>
152-0109	VISION C166/ST10 No-Hooks Toolkit	<ul style="list-style-type: none"> ✓ VISION No-Hooks Toolkit for the Infineon C166/STMicroelectronics ST10 CPU targets.

No-Hooks/OnTarget Software Toolkits

No-Hooks/OnTarget Toolkits and Descriptions Continued:

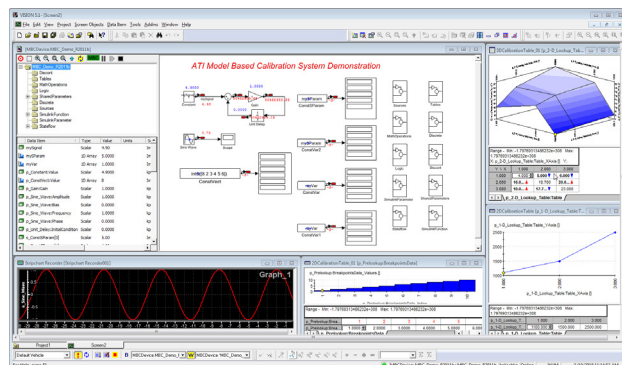
Part Number	Name	Description
Infineon Continued		
152-0110	VISION C166/ST10 OnTarget Toolkit	✓ VISION OnTarget Toolkit for the Infineon C166/STMicroelectronics ST10 CPU targets. <i>Requires 152-0109 C166/ST10 No-Hooks Toolkit</i>
Renesas		
152-0112	VISION SH2 No-Hooks Toolkit	✓ VISION No-Hooks Toolkit for the Renesas SH2/2A CPU targets.
152-0113	VISION SH2 OnTarget Toolkit	✓ VISION OnTarget Toolkit for the Renesas SH2/2A CPU targets. <i>Requires 152-0112 VISION SH2 No-Hooks Toolkit</i>
152-0115	VISION FR60/80 No-Hooks Toolkit	✓ VISION No-Hooks Toolkit for the Fujitsu FR60/FR80 CPU targets.
152-0116	VISION FR60/80 OnTarget Toolkit	✓ VISION OnTarget Toolkit for the Fujitsu FR60/FR80 CPU targets. <i>Requires 152-0115 FR60/80 No-Hooks Toolkit</i>
152-0118	VISION V850 No-Hooks Toolkit	✓ VISION No-Hooks Toolkit for the Renesas V850 CPU targets.
152-0119	VISION V850 OnTarget Toolkit	✓ VISION OnTarget Toolkit for the Renesas V850 CPU targets. <i>Requires 152-0118 VISION V850 No-Hooks Toolkit</i>
152-0122	VISION M32R No-Hooks Toolkit	✓ VISION No-Hooks Toolkit for the Renesas M32R CPU targets.
152-0123	VISION M32R OnTarget Toolkit	✓ VISION OnTarget Toolkit for the Renesas M32R CPU targets. <i>Requires 152-0122 VISION M32R No-Hooks Toolkit</i>
152-0127	VISION RH850 No-Hooks Toolkit	✓ VISION No-Hooks Toolkit for the Renesas RH850 CPU targets.
152-0128	VISION RH850 OnTarget Toolkit	✓ VISION OnTarget Toolkit for the Renesas RH850 CPU targets. <i>Requires 152-0127 VISION RH850 No-Hooks Toolkit</i>



Model Based Calibration Toolkit

The VISION Model Based Calibration toolkit (VISION MBC) is the implementation of a Model-in-the-loop (MIL) system. The MathWorks' tools, MATLAB® and Simulink®, provide the modeling environment and VISION MBC provides the 'in-the-loop' capability, integrating VISION with the model as it runs natively within the Simulink® environment.

Using VISION MBC it is possible to conduct data acquisition and control against a model as if it were a physical device. Using VISION MBC the following features are available:



Part Number	Name	Description
MBC Toolkits		
152-0129	VISION Model Based Calibration Toolkit	<ul style="list-style-type: none"> ✓ Integrates VISION with existing models by linking VISION and the model running within the Simulink® environment on the VISION computer. ✓ Once the model is integrated, VISION will use the same interface used by all other devices within VISION. The distinction between this virtual device and all other physical devices is transparent to VISION. ✓ Powerful display of signals and calibration parameters, including configurable strip charts, recorders, lookups, dials and gauges, are available. ✓ Viewing of the model in VISION along with dynamic data overlays using the optional VISION Browser for Simulink® Models Toolkit. <p><i>Requires 152-0007, 152-0008, 152-0010, 152-0020, 152-0021, 152-0026</i></p>
Optional Toolkits		
152-0100	VISION Browser for Simulink® Models Toolkit	<ul style="list-style-type: none"> ✓ Adds the ability to interact with data on subsystem level graphical views of the OnTarget Simulink® models within VISION. ✓ Adds the ability to display signal values and calibrate parameters directly on the images of the model. <p><i>A recommended Add-On to be paired with the individual xPCTarget, or Model Base Calibration toolkits</i></p>