

# Thermo Scientific Informatics

## Atlas 8.2 Instrument Control Firmware

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Product Name	<b>Atlas 8.2</b>
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Date	30 <sup>th</sup> October 2009
Author	Barry Coope

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The Atlas 8.2 Instrument Control Firmware document contains a list of GC and LC instruments with modules and the current validated firmware versions for Atlas 8.2.x, which have been tested and verified through the Thermo Fisher Scientific quality process. The Atlas DS2K instrument control components are developed to run on the *247 Instrument Controller* Network Appliance and the *DataServer*. The firmware versions contained herein may differ from those in the instrument control and release notes documentation, which were written at time of release of Atlas 8.2 or the instrument control extensions.

Best endeavor will be made to test Atlas 8.2 against the latest firmware version of an instrument. The instrument control extension releases are posted for download on the support website at <https://support.thermoinformatics.com/>. Support of earlier firmware versions or Atlas releases will be reviewed on a by case basis for risk assessment, no guarantee is given for correct operation.

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## Thermo Scientific (Electron / Finnigan)

Model	Comment	Validated	Firmware	Connection
Spectra System	SN4000 Interface Controller	✓	9.05	RS232
	UV1000 Detector		3.09	N/A
	UV2000 Detector	✓	3.13	N/A
	UV3000 Detector	✓	3.21	N/A
	UV6000 Detector	✓	Main Board RAM 1.8 Main Board ROM (Mon960) 0.2 PIC processor 7.0	N/A
	FL2000/3000	✓	3.11	N/A
	P1000 Pump	✓	4.01.10	N/A
	P1500 Pump	✓	4.02.15	N/A
	P2000 Pump	✓	4.03.20	N/A
	P4000 Pump	✓	4.04.40	N/A
	AS1000 Fixed Loop Injection	✓	3.44.10	N/A
	AS3000 with Sample Prep Option	✓	3.44.30	N/A
	AS with Plate Handling	✓	2.13/2.14 AS ROM 1.08	LAN
Surveyor	PDA Photodiode Array Detector	✓	Converter Board ROM 1.08 Converter Board RAM 1.17 Main PDA Board 1.8 Main PDA Board ROM (Mon960) 0.2 Main PDA PIC processor 7.00	LAN (P/N 00825-0-1090). Ethernet Hub
	UV-VIS Dual Wavelength Detector	✓	Converter Board ROM 1.08 Converter Board RAM 1.10 Main Detector Board 3.12	LAN
	Quaternary Pump	✓	Converter Board ROM 1.08 Converter Board RAM 1.14 Main Pump Board 1.10	LAN
	AS with Plate Handling	✓	2.13/2.14 AS ROM 1.08	LAN
	Autosampler Lite		2.14	LAN
Surveyor Plus	PDA Plus	✓	2.02	LAN
	UV-VIS	✓	Converter Board ROM 1.08 Converter Board RAM 1.10 Main Detector Board 3.12	LAN
	Pump Plus	✓	Converter Board ROM 1.08 Converter Board RAM 2.00 Main Pump Board 3.02	LAN
	Autosampler Plus with Plate Handling	✓	2,15 AS ROM 1.08	LAN

	Autosampler Plus Lite ✓	2.15	LAN
Accela™	The Pump module is connected by USB. The connection may be accessed by the Pumplist application, downloadable from the Atlas support site <a href="http://support.thermoinformatics.com/prodinfo/info/product-atlas.asp">http://support.thermoinformatics.com/prodinfo/info/product-atlas.asp</a> 2 instrument per 247 / DataServer are supported		
	PDA ✓	2.02	LAN
	Pump ✓	12.47c	USB
	Autosampler ✓	2.15	LAN
Trace GC	Oven ✓ UFM Oven Inlets: • Split/Splitless • Packed • Purge Packed • On-Column (with/without Large Volume) • Hot-on-Column • PTV Detectors: • FID • NPD • TCD • ECD • PID • FPD • FPD – Dual • PDD External Detectors: (DGFC and non DGFC) • X-FID • X-NPD • X-TCD • X-ECD • X-PID • X-FPD • X-PDD • X-Hall • X-Other Options: • Cryogenics • Ultra Fast Module • Auxiliary Temperature zones 1 & 2 • Valves	4.08	RS232
	AS2000 Standard ASU (includes Double Pro & Gemini) ✓	3.31	Through GC and RS232
	HS2000 Headspace ASU (Multiple Headspace extraction Not Supported) ✓	3.4	Through GC and RS232
	AI/AS3000 ✓	1.25	Through GC and RS232
Focus GC	Oven ✓ Inlets: • Split/Splitless (DGFC) Detectors: • FID (non DGFC) External Detectors: • X-FID • X-NPD • X-TCD • X-ECD • X-PID • X-FPD • X-PDD	2.04	RS232

	Options: • Valves			
	AS2000 Standard ASU	✓	3.31	Through GC and RS232
	HS2000 Headspace ASU	✓	3.4	Through GC and RS232
	AI/AS3000	✓	1.25	Through GC and RS232

## Thermo Scientific Informatics

Model	Comment	Validated	Firmware	Connection
A2D Analogue acquisition device	1 – 10Volts bipolar Non RoHS/WEEE compliant. No longer available. Serial number below 007000	✓	8.2.1	USB
A2D Analogue acquisition device	1 – 10Volts bipolar, Serial number 007000 and above. Only supported on Atlas 8.0 and above. Contact support if customer requires an A2D on a release prior to this.	✓	8.3.4	USB

## Agilent

Model	Comment	Validated	Firmware	Connection
7890	<b>Agilent 7890 v1 control release 19<sup>th</sup> August 2008</b>		Single injection support	
	Oven (G3440A) Inlets: • Temperature-programmable cool on-column (PCOC) ✓ • Split/splitless capillary inlet (S/SL) ✓ Detectors: • Flame ionization detector (FID) ✓ • Thermal conductivity detector (TCD) ✓ • Micro-electron capture detector (μECD) ✓ Options: • Oven Cryogenics ✓ • 3 Auxiliary pneumatics ✓ • 2 Auxiliary temperature ✓ • 8 Valves ✓ • Run time events ✓ • 4 digital signal outputs ✓		A.01.08	LAN
	Autosamplers (G3430A) • Autosampler 7683B tower (G2913A) ✓ • Standard carousel ✓ • 8 vial carousel ✓ 100 vial tray (G2614A) ✓		A.01.00 A.11.03 A.02.01	
7890	<b>Agilent 7890 v2 control release 28<sup>th</sup> October 2009</b>		A.01.09 and A.01.10  Includes status monitoring, direct control and dual inlet injection.	LAN

	Inlets: <ul style="list-style-type: none"> <li>• Oven Cryogenics ✓</li> <li>• Packed purged injection (PPIP) ✓</li> <li>• Programmable temperature vaporizer (with cryogenics) ✓</li> <li>• Agilent PTV [Front] ✓</li> <li>• Volatiles inlet (VI) ✓</li> </ul> Detectors: <ul style="list-style-type: none"> <li>• Nitrogen-phosphorus detector (NPD) ✓</li> <li>• Single-wavelength flame photometric detector (FPD) ✓</li> </ul> Columns up to 6 columns supported ✓		
	Autosamplers (G3430A) <ul style="list-style-type: none"> <li>• Autosampler 7683B tower (G2913A) ✓</li> <li>• Standard carousel ✓</li> <li>• 8 vial carousel ✓</li> </ul> 100 vial tray (G2614A) ✓	A.01.00 A.11.03  A.02.01	
	Agilent 7693 autosampler not currently evaluated		
6890N	Oven Inlets: <ul style="list-style-type: none"> <li>• Split/Splitless (EPC) ✓</li> <li>• Purge Packed (EPC) ✓</li> <li>• Cool-on-Column (EPC) ✓</li> <li>• PCS/SL PTV ✓</li> <li>• Agilent PTV ✓</li> <li>• CIS4 PTV ✓</li> <li>• AC PCM ✓</li> </ul> Detectors: <ul style="list-style-type: none"> <li>• FID (EPC &amp; Non EPC) ✓</li> <li>• NPD (EPC &amp; Non EPC) ✓</li> <li>• TCD (EPC &amp; Non EPC) ✓</li> <li>• <math>\mu</math>ECD (EPC) ✓</li> </ul> Options: <ul style="list-style-type: none"> <li>• Cryogenics ✓</li> <li>• Valves (up to 8) ✓</li> <li>• Run Time Events (up to 25) ✓</li> <li>• Auxiliaries 1-5 ✓</li> </ul>	N.05.05	RS232
	ASU 7683 internal <ul style="list-style-type: none"> <li>• Standard Carousel ✓</li> <li>• 8 Vial Carousel ✓</li> <li>• 100 Vial Tray ✓</li> </ul>	Controller:G1530N.05.05 Tower:G2913A.11.02 Tray:G2614A.02.01	N/A
	ASU 7683B 100 Vial Tray ✓ Standard Turret, ✓ 8 Vial Turret to be tested, not supported. ✓	Controller:G1530N.05.05 Tower:G2913A.11.02 Tray:G2614A.02.01	N/A
	Dual Injector control ✓ Dual Digital Signal acquisition ✓		
	HP JetDirect Print Server Card J4100A, J4106A ✓ (See Knowledgebase article 2293 for configuration on the eService portal <a href="http://eservice.thermo.com/">http://eservice.thermo.com/</a> )		LAN
	Agilent G1369A LAN communication card (supported on Agilent LCs only)		
6850A Series I	Oven ✓ Inlet: <ul style="list-style-type: none"> <li>• Split/Splitless (EPC) ✓</li> </ul> Detector: <ul style="list-style-type: none"> <li>• FID (EPC) ✓</li> </ul> Options: <ul style="list-style-type: none"> <li>• Run Time Events (up to 4) ✓</li> </ul>	A.03.01	RS232
	ASU G2880A ✓ 22/27 carousel ✓		N/A

	HP JetDirect Print Server Card J4100A ✓		LAN
	Agilent G1369A LAN communication card (supported on Agilent LCs)		
6850A Series II	Oven ✓ Inlet: <ul style="list-style-type: none"> <li>• Split/Splitless (EPC) ✓</li> <li>• Purge Packed ✓</li> <li>• AC PCM ✓</li> </ul> Detector: <ul style="list-style-type: none"> <li>• FID (EPC) ✓</li> <li>• TCD (EPC) ✓</li> <li>• PFD (EPC) ✓</li> <li>• µECD (EPC) ✓</li> </ul> Options: <ul style="list-style-type: none"> <li>• Run Time Events (up to 25) ✓</li> <li>• Cryogenics ✓</li> <li>• Valves (up to 4) ✓</li> </ul>	A.05.04  Require Atlas 8.1.2 (April 2006) patch for AC PCM temperature control and air cooling.	RS232
	ASU G2880A ✓ 22/27 carousel ✓		N/A
1100	<b>Agilent 1100 LAN v2 control released 3<sup>rd</sup> Nov 2005</b>	Includes DAD 1315B spectral & multi channel acquisition.	
	<b>Agilent 1100 LAN v3 control released 1<sup>st</sup> August 2006</b>	Includes Well-Plate, Micro Well-Plate, MWD, DAD G1315A, 2 pumps/stack & 3 detectors/stack support.	
	Control Module G1323B	B.03.02 last supported	GPIB
	ASU & Thermostat G1313A(G1330B), G1329A ✓	A.05.01 last supported	GPIB
	Pump G1310A G1311A G1312A ✓	A.05.01 last supported	GPIB
	Column Heater G1316A ✓	A.05.01 last supported	GPIB
	VWD detector G1314A ✓	A.05.01 last supported	GPIB
	RID detector G1362A ✓	A.05.01 last supported	GPIB
	DAD detector G1315B Single digital channel acq ✓	A.05.01 last supported	GPIB
	FL detector G1321A Single digital channel acq ✓	A.04.11	GPIB
LAN cards	Agilent G1369A LAN communication card ✓	A.05.11	LAN
	HP JetDirect Print Server Card J4100, J4106AA ✓ (See Knowledgebase article 2293 for configuration on the eService portal <a href="http://eservice.thermo.com/">http://eservice.thermo.com/</a> )	A.05.11	LAN
	Control Module G1323B	B.03.22	LAN
	ASU & Thermostat G1313A (G1330B), G1329A ✓	A.05.11	LAN
	Well-Plate & Thermostat G1367A(G1330B), G1368A ✓	A.05.11	LAN
	Micro Well-Plate & Thermostat G1377A(G1330B), G1378A ✓	A.05.11	LAN
	Pump G1310A G1311A G1312A ✓	A.05.11	LAN
	Column Heater G1316A ✓	A.05.11	LAN
	VWD detector G1314A ✓	A.05.11	LAN
	RID detector G1362A ✓	A.05.11	LAN
	MWD detector G1365A/B ✓	A.05.11	LAN
	DAD detector G1315A/B Single digital channel acq ✓	A.05.11	LAN
	FL detector G1321A Single digital channel acq ✓	A.05.11	LAN
	Degasser G1322A	No Control	N/A
1200 In 1100 Emulation	Using A.05.11 firmware with v3 of AG1100 LAN control ✓  Downgrade firmware on 1200 and 1200 SL modules using Agilent's emulation firmware tool; <a href="http://www.chem.agilent.com/scripts/cag_firmware.asp?nmod=LC&amp;CGUID=DA07CC90-D1E2-4E1A-B5CB-65737F92CB1F">http://www.chem.agilent.com/scripts/cag_firmware.asp?nmod=LC&amp;CGUID=DA07CC90-D1E2-4E1A-B5CB-65737F92CB1F</a> Select the A.05.11 emulation mode file	A.05.11	LAN

	(1100_Emulation_Mode\A511_A512). Modules must be renamed using the downgrade firmware tool, e.g. the G1312B SL Pump will be changed to G1312A.  *Agilent DAD G1315C SL and MWD G1365C SL cannot be downgraded to run in emulation mode.		
	<b>Agilent 1100 LAN v4 control released 2<sup>nd</sup> November 2007</b>	Includes Agilent 1200 control including SL (Starlight) modules listed below and External Control Board for relay control.	
1100 / 1200	<p>Download firmware for the Agilent 1100/1200 from <a href="http://www.chem.agilent.com/scripts/cag_firmware.asp?nmod=LC&amp;CGUID=585A2344-F453-46E0-9055-307F0F818C32">http://www.chem.agilent.com/scripts/cag_firmware.asp?nmod=LC&amp;CGUID=585A2344-F453-46E0-9055-307F0F818C32</a></p> <p>Select 'Agilent 1100/1200 Systems A.06.02/06/B.01.06/B.02.05' firmware, which module firmware versions correspond to the compiled list.</p> <p>Special note should be made between of Agilent 1100 and 1200 hybrid stacks running 5.11 and 6.02 firmware. Check the compatibility matrix associated with the firmware download on the Agilent site.</p> <p>*Agilent DAD G1315C SL and MWD G1365C SL cannot be downgraded below firmware 6.01.</p> <p>*Agilent G1354A is a bundled package consisting of the Quaternary Pump (G1311A), solvent cabinet, 4 solvent bottles, vacuum degasser and CAN cable.</p>	<p>HPLC Control Module G1323B ✓ B.04.02</p> <p>Instant Pilot G4208A ✓ B.02.01</p> <p>Autosampler G1313A ✓ A.06.04</p> <p>Autosampler plus Thermostat G1313A, G1330B ✓ A.06.04</p> <p>Thermostatted Autosampler G1329A ✓ A.06.04</p> <p>Thermostatted Autosampler SL G1329B ✓ A.06.04</p> <p>Well-plate ASU G1367A ✓ A.06.03</p> <p>Well-plate ASU Thermostat G1367A, G1330B ✓ A.06.03</p> <p>Thermostatted Well-plate ASU G1368A ✓ A.06.04</p> <p>Micro Well-plate ASU G1377A ✓ A.06.03</p> <p>Micro Well-plate ASU Thermostat G1377A, G1330B ✓ A.06.03</p> <p>Thermostatted Micro Well-plate ASU G1378A ✓ A.06.04</p> <p>Well-plate ASU G1367B ✓ A.06.04</p> <p>Well-plate ASU SL G1367C ✓ A.06.03</p> <p>Binary Pump G1312A ✓ A.06.04</p> <p>Binary Pump SL G1312B ✓ A.06.06</p> <p>Isocratic Pump G1310A ✓ A.06.04</p> <p>Quaternary Pump G1311A ✓ A.06.04</p> <p>Degasser G1322A ✓ A.06.02</p> <p>Column Heater G1316A ✓ A.06.04</p> <p>Column Heater TCC-SL G1316B ✓ A.06.04</p> <p>Variable Wavelength Detector G1314A ✓ A.06.04</p> <p>Variable Wavelength Detector G1314B ✓ A.06.04</p> <p>Variable Wavelength Detector SL G1314C ✓ A.06.04</p> <p>Refractive Index Detector G1362A ✓ A.06.02</p> <p>Diode Array Detector G1315A/B ✓ A.06.04</p> <p>Diode Array Detector SL G1315C/D ✓ B.01.06</p> <p>Multiple Wavelength Detector G1365A/B ✓ A.06.04</p> <p>Multiple Wavelength Detector G1365C/D ✓ B.01.06</p> <p>Fluorescence Detector (Single channel) G1321A ✓ A.06.02</p> <p>System Resident Firmware ✓ A.06.02</p> <p>External Contacts Board G1351 ✓ A.06.02</p>	LAN
1100 / 1200	<b>Agilent 1100 LAN v4.1 control released 1<sup>st</sup> May 2008</b>	Maintenance release of v4 control, using same firmware release. Updates to VWD SL, Binary Pump	

		Gradient, Holmium Test and External Contacts Board.																																																																																																				
1100 / 1200	<b>Agilent 1100 LAN v4.2 control released 17<sup>th</sup> Oct 2008</b>	Maintenance release of v4.1 control addressing dual instrument spectral acquisition and real-time parameter plotting. Agilent 1100 validated																																																																																																				
	<p>Download Agilent 1100/1200 fimware from <a href="http://www.chem.agilent.com/en-US/Support/Downloads/firmware/Pages/LC.aspx">http://www.chem.agilent.com/en-US/Support/Downloads/firmware/Pages/LC.aspx</a>            Agilent 1100 &amp; 1200 validated on firmware 'Agilent 1100/1200 Systems A.06.02/06/B.01.06/B.02.05' firmware' and 'Agilent 1100/1200 Firmware A.06.1x/B.06.1x (current)'</p> <table border="0"> <tr><td>HPLC Control Module G1323B</td><td>✓</td><td>B.04.02</td></tr> <tr><td>Instant Pilot G4208A</td><td>✓</td><td>B.04.02</td></tr> <tr><td>Autosampler G1313A</td><td>✓</td><td>A.06.10 [004]</td></tr> <tr><td>Autosampler plus Thermostat G1313A, G1330B</td><td>✓</td><td>A.06.10 [004]</td></tr> <tr><td>Thermostatted Autosampler G1329A</td><td>✓</td><td>A.06.10 [006]</td></tr> <tr><td>Thermostatted Autosampler SL G1329B</td><td>✓</td><td>A.06.10 [006]</td></tr> <tr><td>Well-plate ASU G1367A</td><td>✓</td><td>A.06.12 [003]</td></tr> <tr><td>Well-plate ASU Thermostat G1367A, G1330B</td><td>✓</td><td>A.06.12 [003]</td></tr> <tr><td>Thermostatted Well-plate ASU G1368A</td><td>✓</td><td>A.06.12 [003]</td></tr> <tr><td>Micro Well-plate ASU G1377A</td><td>✓</td><td>A.06.12 [003]</td></tr> <tr><td>Micro Well-plate ASU Thermostat G1377A, G1330B</td><td>✓</td><td>A.06.12 [003]</td></tr> <tr><td>Thermostatted Micro Well-plate ASU G1378A</td><td>✓</td><td>A.06.12 [003]</td></tr> <tr><td>Well-plate ASU G1367B</td><td>✓</td><td>A.06.12 [003]</td></tr> <tr><td>Well-plate ASU SL G1367C</td><td>✓</td><td>A.06.12 [003]</td></tr> <tr><td>Binary Pump G1312A</td><td>✓</td><td>A.06.10 [005]</td></tr> <tr><td>Binary Pump SL G1312B</td><td>✓</td><td>A.06.10 [005]</td></tr> <tr><td>Isocratic Pump G1310A</td><td>✓</td><td>A.06.10 [005]</td></tr> <tr><td>Quaternary Pump G1311A</td><td>✓</td><td></td></tr> <tr><td>Degasser G1322A</td><td>✓</td><td>A.06.10 [005]</td></tr> <tr><td>Column Heater G1316A</td><td>✓</td><td>No firmware</td></tr> <tr><td>Column Heater TCC-SL G1316B</td><td>✓</td><td>A.06.10 [004]</td></tr> <tr><td>Variable Wavelength Detector G1314A</td><td>✓</td><td>A.06.10 [004]</td></tr> <tr><td>Variable Wavelength Detector G1314B</td><td>✓</td><td>A.06.10 [004]</td></tr> <tr><td>Variable Wavelength Detector SL G1314C</td><td>✓</td><td>A.06.10 [004]</td></tr> <tr><td>Refractive Index Detector G1362A</td><td>✓</td><td>A.06.10 [004]</td></tr> <tr><td>Diode Array Detector G1315A/B</td><td>✓</td><td>A.06.10 [004]</td></tr> <tr><td>Diode Array Detector SL G1315C/D</td><td>✓</td><td>A.06.10 [004]</td></tr> <tr><td>Multiple Wavelength Detector G1365A/B</td><td>✓</td><td>B.06.13 [002]</td></tr> <tr><td>Multiple Wavelength Detector G1365C/D</td><td>✓</td><td>A.06.10 [004]</td></tr> <tr><td>Fluorescence Detector (Single channel) G1321A</td><td>✓</td><td>B.06.13 [002]</td></tr> <tr><td>System Resident Firmware</td><td>✓</td><td>A.06.10 [004]</td></tr> <tr><td>External Contacts Board G1351</td><td>✓</td><td>A.06.10 [004]</td></tr> <tr><td></td><td></td><td>No firmware</td></tr> </table>	HPLC Control Module G1323B	✓	B.04.02	Instant Pilot G4208A	✓	B.04.02	Autosampler G1313A	✓	A.06.10 [004]	Autosampler plus Thermostat G1313A, G1330B	✓	A.06.10 [004]	Thermostatted Autosampler G1329A	✓	A.06.10 [006]	Thermostatted Autosampler SL G1329B	✓	A.06.10 [006]	Well-plate ASU G1367A	✓	A.06.12 [003]	Well-plate ASU Thermostat G1367A, G1330B	✓	A.06.12 [003]	Thermostatted Well-plate ASU G1368A	✓	A.06.12 [003]	Micro Well-plate ASU G1377A	✓	A.06.12 [003]	Micro Well-plate ASU Thermostat G1377A, G1330B	✓	A.06.12 [003]	Thermostatted Micro Well-plate ASU G1378A	✓	A.06.12 [003]	Well-plate ASU G1367B	✓	A.06.12 [003]	Well-plate ASU SL G1367C	✓	A.06.12 [003]	Binary Pump G1312A	✓	A.06.10 [005]	Binary Pump SL G1312B	✓	A.06.10 [005]	Isocratic Pump G1310A	✓	A.06.10 [005]	Quaternary Pump G1311A	✓		Degasser G1322A	✓	A.06.10 [005]	Column Heater G1316A	✓	No firmware	Column Heater TCC-SL G1316B	✓	A.06.10 [004]	Variable Wavelength Detector G1314A	✓	A.06.10 [004]	Variable Wavelength Detector G1314B	✓	A.06.10 [004]	Variable Wavelength Detector SL G1314C	✓	A.06.10 [004]	Refractive Index Detector G1362A	✓	A.06.10 [004]	Diode Array Detector G1315A/B	✓	A.06.10 [004]	Diode Array Detector SL G1315C/D	✓	A.06.10 [004]	Multiple Wavelength Detector G1365A/B	✓	B.06.13 [002]	Multiple Wavelength Detector G1365C/D	✓	A.06.10 [004]	Fluorescence Detector (Single channel) G1321A	✓	B.06.13 [002]	System Resident Firmware	✓	A.06.10 [004]	External Contacts Board G1351	✓	A.06.10 [004]			No firmware	For 6.0x firmware refer to v4 release compatibility	
HPLC Control Module G1323B	✓	B.04.02																																																																																																				
Instant Pilot G4208A	✓	B.04.02																																																																																																				
Autosampler G1313A	✓	A.06.10 [004]																																																																																																				
Autosampler plus Thermostat G1313A, G1330B	✓	A.06.10 [004]																																																																																																				
Thermostatted Autosampler G1329A	✓	A.06.10 [006]																																																																																																				
Thermostatted Autosampler SL G1329B	✓	A.06.10 [006]																																																																																																				
Well-plate ASU G1367A	✓	A.06.12 [003]																																																																																																				
Well-plate ASU Thermostat G1367A, G1330B	✓	A.06.12 [003]																																																																																																				
Thermostatted Well-plate ASU G1368A	✓	A.06.12 [003]																																																																																																				
Micro Well-plate ASU G1377A	✓	A.06.12 [003]																																																																																																				
Micro Well-plate ASU Thermostat G1377A, G1330B	✓	A.06.12 [003]																																																																																																				
Thermostatted Micro Well-plate ASU G1378A	✓	A.06.12 [003]																																																																																																				
Well-plate ASU G1367B	✓	A.06.12 [003]																																																																																																				
Well-plate ASU SL G1367C	✓	A.06.12 [003]																																																																																																				
Binary Pump G1312A	✓	A.06.10 [005]																																																																																																				
Binary Pump SL G1312B	✓	A.06.10 [005]																																																																																																				
Isocratic Pump G1310A	✓	A.06.10 [005]																																																																																																				
Quaternary Pump G1311A	✓																																																																																																					
Degasser G1322A	✓	A.06.10 [005]																																																																																																				
Column Heater G1316A	✓	No firmware																																																																																																				
Column Heater TCC-SL G1316B	✓	A.06.10 [004]																																																																																																				
Variable Wavelength Detector G1314A	✓	A.06.10 [004]																																																																																																				
Variable Wavelength Detector G1314B	✓	A.06.10 [004]																																																																																																				
Variable Wavelength Detector SL G1314C	✓	A.06.10 [004]																																																																																																				
Refractive Index Detector G1362A	✓	A.06.10 [004]																																																																																																				
Diode Array Detector G1315A/B	✓	A.06.10 [004]																																																																																																				
Diode Array Detector SL G1315C/D	✓	A.06.10 [004]																																																																																																				
Multiple Wavelength Detector G1365A/B	✓	B.06.13 [002]																																																																																																				
Multiple Wavelength Detector G1365C/D	✓	A.06.10 [004]																																																																																																				
Fluorescence Detector (Single channel) G1321A	✓	B.06.13 [002]																																																																																																				
System Resident Firmware	✓	A.06.10 [004]																																																																																																				
External Contacts Board G1351	✓	A.06.10 [004]																																																																																																				
		No firmware																																																																																																				

## Hewlett Packard

Model	Comment	Validated	Firmware	Connection
6890 Plus	Oven Inlets: <ul style="list-style-type: none"> <li>• Split/Splitless (EPC)</li> <li>• Purge Packed (EPC)</li> <li>• Cool-on-Column (EPC)</li> <li>• PCS/SL PTV</li> <li>• Agilent PTV</li> <li>• CIS4 PTV</li> <li>• AC PCM</li> </ul>	✓ ✓ ✓ ✓ ✓ ✓ ✓	A.03.08	RS232

	Detectors: <ul style="list-style-type: none"> <li>• FID (EPC &amp; Non EPC) ✓</li> <li>• NPД (EPC &amp; Non EPC) ✓</li> <li>• TCD (EPC &amp; Non EPC) ✓</li> <li>• μECD (EPC) ✓</li> </ul> Options: <ul style="list-style-type: none"> <li>• Cryogenics ✓</li> <li>• Valves (up to 8) ✓</li> <li>• Run Time Events (up to 25) ✓</li> <li>• Auxiliaries 1-5 ✓</li> </ul>		
	ASU 7683 internal Standard Carousel ✓ 8 Vial Carousel ✓ 100 Vial Tray ✓	Tray:G2612A.01.02 Tower:G2613A.10.01	N/A
	G1512A external autosampler box		N/A
	Dual Injector control ✓ Dual Digital Signal acquisition ✓		
5890 Series I & II	Oven ✓ Inlets: <ul style="list-style-type: none"> <li>• Split/Splitless ✓</li> <li>• Purge Packed ✓</li> <li>• Cool on Column ✓</li> <li>• PTV ✓</li> </ul> Detectors: <ul style="list-style-type: none"> <li>• FID ✓</li> <li>• NPД ✓</li> <li>• TCD ✓</li> <li>• ECD ✓</li> <li>• FPD ✓</li> </ul> Options: <ul style="list-style-type: none"> <li>• Valves (up to 4) ✓</li> </ul>	HP5890A.02.01(RS232 Only)	RS232 & HBIP boards
	ASU 7673 Standard Carousel ✓ 8 Vial Carousel ✓ 100 Vial Tray ✓	3.0	RS232 & HBIP boards
	ASU G1512A Standard Carousel ✓ 8 Vial Carousel ✓ 100 Vial Tray ✓		RS232 boards
	Dual Injector control ✓ Dual digital Signal acquisition ✓	Requires Atlas 8.1.1 or 8.1.2 patch	

## Perkin Elmer

Model	Comment	Validated	Firmware	Connection
Series 200	Autosampler (N293-0100)	✓	1.08	RS232 Cables must be purchased from PerkinElmer
	Peltier Tray Control Assembly (N293-0036)	✓	N/A	N/A
	Binary Pump (N291-0101) ✓ Isocratic Pump (N291-0100) ✓ Quaternary Pump (N291-0102) ✓	✓	2.43	RS232 Cables must be purchased from PerkinElmer
	UV/VIS Detector (N292-0011)	✓	1.01	RS232 Cables must be purchased from PerkinElmer

## Shimadzu

Model	Comment	Validated	Firmware	Connection
	<b>Shimadzu VP Series v2 control released 3<sup>rd</sup> Nov 2005</b>		Includes large volume injection support over 500 µl	
SLC-10Avp	Controller SLC-10Avp	✓	5.42	
	Pump LC-8A, LC-6AD/7A, LC-10AD, LC-10AS, LC-10AT, LC-10Ai, LC-10ADvp, LC-10ATvp	✓	5.27	
	Detector SPD-10A, SPD-10Ai, SPD-10AV, SPD-10Avi, SPD-10Avp, SPD-10AVvp	✓	5.24	
	ASU SIL-10ADvp, SIL-10AF, SIL-HTA, SIL-HTC	✓	5.32	
	Column Oven CTO-10AC, CTO-10Avp, CTO-10ACvp and CTO-10ASvp.	✓		

## Waters

Model	Comment	Validated	Firmware	Connection
Alliance 2690	In-Line Degasser Column Heater Sample Heater/Cooler AutoSampler	✓ ✓ ✓ ✓	1.2	
2695/2695XE	In-Line Degasser Column Heater Sample Heater/Cooler AutoSampler CapLC 2487 / 486 Dual Wavelength Absorbance Detector (A2D collection)	✓ ✓ ✓ ✓ ✓	2.02	

## Digi Communication Board

Model	Comment	Validated	Firmware	Connection
Neo Universal PCI 8 port	8 serial port board for serial communication expansion. Part Number 77000858 Only available for the DataServer	✓ ✓ ✓	NA	PCMCIA
Connector Xp & Neo 8 Port DTE Cable DB-9M	8 serial port cable to be used in association with the Neo Universal PCI 8 port board Part Number 76000529 Only available for the DataServer	✓	NA	PCMCIA / RS232