

### Overview

Models	Workstation	Part Number
<b>PC3-10600 (DDR3-1333) ECC Unbuffered DIMMs</b>		
HP 1GB (1x1GB) DDR3-1333 ECC RAM	Z200 SFF, Z200, Z400, Z600, Z800	FX698AA
HP 2GB (1x2GB) DDR3-1333 ECC RAM	Z200 SFF, Z200, Z400, Z600, Z800	FX699AA
HP 4GB (1x4GB) DDR3-1333 ECC RAM	Z200 SFF, Z200, Z400, Z600	NL797AA
<b>PC3-10600 (DDR3-1333) ECC Registered DIMMs</b>		
HP 4GB (1x4GB) DDR3-1333 ECC Registered RAM	Z600, Z800	FX621AA
HP 8GB (1x8GB) DDR3-1333 ECC Registered RAM	Z600, Z800	FX622AA
<b>PC3-8500 (DDR3-1066) ECC Registered DIMMs</b>		
HP 16GB (1x16GB) DDR3-1066 ECC Registered RAM	Z800	NL674AA

### Introduction

Boost the capabilities of your HP Workstation and keep it performing reliably with HP DDR3 memory. Upgrading your memory is a cost-effective way to improve system performance when insufficient memory and hard drive paging is slowing your applications down.

Today's workstation architectures offer flexibility and power because of operating system innovation, multiple core processing, and 64-bit processing, but these benefits may require increased system memory for effective support. For example, Microsoft suggests a minimum of 1GB of system memory as a basic recommended requirement for Microsoft Windows 7.

Sizing your memory correctly should give these innovations the space they need to perform effectively, leaving enough free space for you to run whatever configuration of applications you require and to run your largest data set without having to page to the hard drive (which seriously hinders performance), and should have enough headroom for growth in the future.

In workstations that have a large number of DIMM slots, you can achieve larger memory configurations at a lower cost by filling more slots with lower-capacity memory modules.

Many workstation-class chipsets require DDR3 memory which also has Error Correcting and Checking (ECC) capabilities.

ECC is a technology that allows for the correction of single-bit memory errors. These errors could otherwise corrupt a data set and introduce hidden errors or even system that many users would find unacceptable.

When adding memory it is important to use comparable DIMMs to those already installed. Adding faster DIMMs will increase the amount of memory but system memory will still run at the speed of the slowest DIMM.

Because of the continuous development and enhancement of high-performance software applications and operating systems, the minimum memory requirements are increasing with each new software version. Therefore, to maintain the same level of system performance, it is recommended that customers add more memory when they buy new software or upgrade to newer versions of software.



### Overview

#### Key Benefits

- Faster start-up times with fewer delays during routine operations
  - More programs running simultaneously
  - Easy toggling between several open applications
  - Rigorous supplier qualification processes for ensured quality
  - Thoroughly tested by HP for high reliability
- 

#### Compatibility

See Models object for compatibility.

---

#### Service and Support

Your Option Limited Warranty is a one (1) year (HP Option Limited Warranty Period) parts replacement warranty on any HP-branded or Compaq-branded options (HP Options). If your HP Option is installed in an HP Hardware Product, HP may provide warranty service either for the HP Option Limited Warranty Period or the remaining Limited Warranty Period of the HP Hardware Product in which the HP Option is being installed, whichever period is the longer but not to exceed three (3) years from the date you purchased the HP Option.



### Technical Specifications

DDR Memory DIMMs	Dimensions	5.25 x 1.2 x .3 in (13.3 x 3 x .8 cm)
	Weight	1.1 oz (31.2 g)

Operating Systems supported: All supported Windows 7 versions, Windows Vista Business 64, Windows Vista Home Basic 32, Windows XP Professional or Windows XP Home 32. No driver is required for this device. Native support is provided by the operating system.

**NOTE:** Windows 7 systems may require upgraded and/or separately purchased hardware and/or a DVD drive to install the Windows software and take full advantage of Windows 7 functionality. See <http://www.microsoft.com/windows/windows-7/> for details.

Certain Windows Vista product features require advanced or additional hardware. Windows Vista Upgrade Advisor can help you determine which features of Windows Vista will run on your computer. To download the tool, visit: <http://www.windowsvista.com/upgradeadvisor>. For Windows Vista system requirements, visit: <http://www.windowsvista.com/systemrequirements>.

---

© Copyright 2010 Hewlett-Packard Development Company, L.P.  
The information contained herein is subject to change without notice.  
Microsoft and Windows are US registered trademarks of Microsoft Corporation.



### Overview

#### Models

##### PC3-12800 (DDR3-1600) ECC Unbuffered DIMMs

	Workstations Supported	Part Number
HP 2GB (1x2GB) DDR3-1600 ECC RAM	Z1, Z220 CMT/SFF, Z420, Z620, Z820	A2Z47AA
HP 4GB (1x4GB) DDR3-1600 ECC RAM	Z1, Z220 CMT/SFF, Z420, Z620, Z820	A2Z48AA
HP 8GB (1x8GB) DDR3-1600 ECC RAM	Z1, Z210 CMT/SFF, Z220 CMT/SFF, Z420	A2Z50AA

##### PC3-12800 (DDR3-1600) ECC Registered DIMMs

HP 4GB (1x4GB) DDR3-1600 ECC Registered RAM	Z620, Z820	A2Z49AA
HP 8GB (1x8GB) DDR3-1600 ECC Registered RAM	Z620, Z820	A2Z51AA
HP 16GB (1x16GB) DDR3-1600 ECC Registered RAM	Z820	A2Z52AA

##### PC3-10600 (DDR3-1333) ECC Load Reduced DIMMs

HP 32GB (1x32GB) DDR3-1333 ECC Load Reduced RAM	Z820	A2Z53AA
---	------	---------

##### PC3-10600 (DDR3-1333) ECC Unbuffered DIMMs

HP 1GB (1x1GB) DDR3-1333 ECC RAM	Z210 CMT/SFF, Z400, Z600, Z800	FX698AA
HP 2GB (1x2GB) DDR3-1333 ECC RAM	Z210 CMT/SFF, Z400, Z600, Z800	FX699AA
HP 4GB (1x4GB) DDR3-1333 ECC RAM	Z210 CMT/SFF, Z400, Z600, Z800	NL797AA

##### PC3-10600 (DDR3-1333) ECC Registered DIMMs

HP 4GB (1x4GB) DDR3-1333 ECC Registered RAM	Z600, Z800	FX621AA
HP 8GB (1x8GB) DDR3-1333 ECC Registered RAM	Z600, Z800	FX622AA

##### PC3-8500 (DDR3-1066) ECC Registered DIMMs

HP 16GB (1x16GB) DDR3-1066 ECC Registered RAM	Z800	NL674AA
---	------	---------

### Introduction

Boost the capabilities of your HP Workstation and keep it performing reliably with HP DDR3 memory. Upgrading your memory is a cost-effective way to improve system performance when insufficient memory and hard drive paging is slowing your applications down.

Today's workstation architectures offer flexibility and power because of operating system innovation, multiple core processing, and 64-bit processing, but these benefits may require increased system memory for effective support. For example, Microsoft suggests a minimum of 1GB of system memory as a basic recommended requirement for Microsoft Windows 7.

Sizing your memory correctly should give these innovations the space they need to perform effectively, leaving enough free space for you to run whatever configuration of applications you require and to run your largest data set without having to page to the hard drive (which seriously hinders performance), and should have enough headroom for growth in the future. In workstations that have a large number of DIMM slots, you can achieve larger memory configurations at a lower cost by filling more slots with lower-capacity memory modules.

Many workstation-class chipsets require DDR3 memory which also has Error Correcting and Checking (ECC) capabilities. ECC is a technology that allows for the correction of single-bit memory errors. These errors could otherwise corrupt a data set and introduce hidden errors or even system that many users would find unacceptable.

### Overview

When adding memory, it is important to use comparable DIMMs to those already installed. Adding faster DIMMs will increase the amount of memory but system memory will still run at the speed of the slowest DIMM.

Because of the continuous development and enhancement of high-performance software applications and operating systems, the minimum memory requirements are increasing with each new software version. Therefore, to maintain the same level of system performance, it is recommended that customers add more memory when they buy new software or upgrade to newer versions of software.

---

### Key Benefits

- Faster start-up times with fewer delays during routine operations
  - More programs running simultaneously
  - Easy toggling between several open applications
  - Rigorous supplier qualification processes for ensured quality
  - Thoroughly tested by HP for high reliability
- 

### Compatibility

See Models object for compatibility.

---

### Service and Support

Your Option Limited Warranty is a one (1) year (HP Option Limited Warranty Period) parts replacement warranty on any HP-branded or Compaq-branded options (HP Options). If your HP Option is installed in an HP Hardware Product, HP may provide warranty service either for the HP Option Limited Warranty Period or the remaining Limited Warranty Period of the HP Hardware Product in which the HP Option is being installed, whichever period is the longer but not to exceed three (3) years from the date you purchased the HP Option.

### Technical Specifications

<b>DDR Memory DIMMs</b>	<b>Dimensions</b>	5.25 x 1.2 x .3 in (13.3 x 3 x .8 cm)
	<b>Weight</b>	1.1 oz (31.2 g)

Operating Systems supported: All supported Windows 7 versions, Windows Vista Business 64, Windows Vista Home Basic 32, Windows XP Professional or Windows XP Home 32. No driver is required for this device. Native support is provided by the operating system.

**NOTE:** Windows 7 systems may require upgraded and/or separately purchased hardware and/or a DVD drive to install the Windows software and take full advantage of Windows 7 functionality. See <http://www.microsoft.com/windows/windows-7/> for details.

---

© Copyright 2012 Hewlett-Packard Development Company, L.P.

The information contained herein is subject to change without notice.

Microsoft and Windows are US registered trademarks of Microsoft Corporation.

### Overview

Models	Workstations Supported	Part Number
<b>DDR3-1600 ECC Unbuffered DIMMs</b>		
HP 2GB (1x2GB) DDR3-1600 ECC RAM	Z1, Z230 CMT/SFF, Z420, Z620, Z820	A2Z47AA
HP 4GB (1x4GB) DDR3-1600 ECC RAM	Z1, Z230 CMT/SFF, Z420, Z620, Z820	A2Z48AA
HP 8GB (1x8GB) DDR3-1600 ECC RAM	Z1, Z230 CMT/SFF, Z420	A2Z50AA
HP 2GB (1x2GB) DDR3-1600 nECC RAM	Z1	B1S52AA
HP 4GB (1x4GB) DDR3-1600 nECC RAM	Z1, Z230 CMT/SFF	B1S53AA
HP 8GB (1x8GB) DDR3-1600 non-ECC RAM	Z230 CMT/SFF	B1S54AA
<b>DDR3 1600 ECC Registered DIMMs</b>		
HP 4GB (1x4GB) DDR3-1600 ECC Registered RAM	Z620, Z820	A2Z49AA
HP 8GB (1x8GB) DDR3-1600 ECC Registered RAM	Z620, Z820	A2Z51AA
HP 16GB (1x16GB) DDR3-1600 ECC Registered RAM	Z620, Z820	A2Z52AA
HP 32GB DDR3-1333 ECC Load Reduced (LR) RAM	Z820	A2Z53AA
<b>DDR3-1866 ECC Unbuffered DIMMs</b>		
HP 2GB (1x2GB) DDR3-1866 ECC RAM	Z1 G2, Z420, Z620, Z820	E2Q90AA
HP 4GB (1x4GB) DDR3-1866 ECC RAM	Z1 G2, Z420, Z620, Z820	E2Q91AA
HP 8GB (1x8GB) DDR3-1866 ECC RAM	Z1 G2, Z420, Z620, Z820	E2Q93AA
HP 4GB (1x4GB) DDR3-1866 nECC RAM	Z1 G2	E5Z83AA
<b>DDR3-1866 ECC Registered DIMMs</b>		
HP 4GB (1x4GB) DDR3-1866 ECC Reg RAM	Z620, Z820	E2Q92AA
HP 8GB (1x8GB) DDR3-1866 ECC Reg RAM	Z620, Z820	E2Q94AA
HP 16GB (1x16GB) DDR3-1866 ECC Reg RAM	Z620, Z820	E2Q95AA
32GB DDR3-1333 ECC Load Reduced (LR) RAM	Z820	F1F33AA
<b>DDR4-2133 ECC Registered DIMMs</b>		
4GB DDR4-2133 ECC Registered RAM	Z440, Z640, Z840	J9P81AA
8GB DDR4-2133 ECC Registered RAM	Z440, Z640, Z840	J9P82AA
16GB DDR4-2133 ECC Registered RAM	Z440, Z640, Z840	J9P83AA
32GB DDR4-2133 ECC Load Reduced (LR) RAM	Z640, Z840	J9P84AA

### Technical Specifications

#### Introduction

Boost the capabilities of your HP Workstation and improve system performance and application responsiveness with low-cost, high-performance DDR3 and DDR4 memory from HP.

#### Work smarter

Improve start-up times with fewer delays during routine operations, run more programs simultaneously, and easily toggle between several open applications.

#### Benefit from integrated ECC

Help avoid errors that can corrupt data sets and introduce system issues with Error Checking and Correcting technology that corrects single-bit memory errors.

#### Get HP-tested reliability

Ensure all of your memory characteristics match by upgrading with HP-branded memory that's been tested at the component level and to ensure seamless system-level integration with HP products

#### Supported by HP

Protect your investment with a warranty that is backed by the same award-winning HP service and support you get for your workstation.<sup>1</sup>

---

Note: When adding memory, it is important to use comparable DIMMs to those already installed. Adding faster DIMMs will increase the amount of memory but system memory will still run at the speed of the slowest DIMM. Because of the continuous development and enhancement of high-performance software applications and operating systems, the minimum memory requirements are increasing with each new software version. Therefore, to maintain the same level of system performance, it is recommended that customers add more memory when they buy new software or upgrade to newer versions of software.

---

### Key Benefits

- Faster start-up times with fewer delays during routine operations
  - More programs running simultaneously
  - Easy toggling between several open applications
  - Rigorous supplier qualification processes for ensured quality
  - Thoroughly tested by HP for high reliability
- 

### Compatibility

- See Model compatibility list on Pg.1.
- 

### Service and Support

<sup>1</sup>Your Option Limited Warranty is a one (1) year parts replacement limited warranty on any HP-branded or Compaq-branded options (HP Options). If your HP Option is installed in an HP Hardware Product, HP may provide warranty service either for the HP Option Limited Warranty Period or the remaining Limited Warranty Period of the HP Hardware Product in which the HP Option is being installed, whichever period is the longer but not to exceed three (3) years from the date you purchased the HP



### Technical Specifications

Option.

---

<b>DDR4 Memory DIMMs</b>	<b>Dimensions (WxHxD)</b>	5.26 x 1.24 x 0.29in (13.35 x 3.14 x 0.73cm)
	<b>Weight</b>	0.87oz (24.7g)
<b>DDR3 Memory DIMMs</b>	<b>Dimensions (WxHxD)</b>	5.26 x 1.20 x 0.30in (13.35 x 3.05 x 0.755cm)
	<b>Weight</b>	1.1oz (31.2g)

Operating Systems supported: All supported versions of Microsoft Windows 7, 8 and 8.1. No driver is required for this device. Native support is provided by the operating system.

---

© Copyright 2014 Hewlett-Packard Development Company, L.P.  
The information contained herein is subject to change without notice.  
Microsoft and Windows are US registered trademarks of Microsoft Corporation.

### Technical Specifications

<b>Date of change:</b>	<b>Version History:</b>		<b>Description of change:</b>
<b>August 1, 2012</b>	From Version 1 to 2	Changed	Changes made throughout the entire QuickSpec
<b>July 1, 2014</b>	V20 to v21	Changed	Updates throughout all Quickspecs document

### Overview

### Models

Models	Workstations Supported	Part Number
<b>DDR3-1600 ECC Unbuffered DIMMs</b>		
HP 2GB (1x2GB) DDR3-1600 ECC RAM	Z1, Z230 CMT/SFF, Z420, Z620, Z820	A2Z47AA
HP 4GB (1x4GB) DDR3-1600 ECC RAM	Z1, Z230 CMT/SFF, Z420, Z620, Z820	A2Z48AA
HP 8GB (1x8GB) DDR3-1600 ECC RAM	Z1, Z230 CMT/SFF, Z420	A2Z50AA
HP 2GB (1x2GB) DDR3-1600 nECC RAM	Z1	B1S52AA
HP 4GB (1x4GB) DDR3-1600 nECC RAM	Z1, Z230 CMT/SFF	B1S53AA
HP 8GB (1x8GB) DDR3-1600 non-ECC RAM	Z230 CMT/SFF	B1S54AA
<b>DDR3-1600 ECC Registered DIMMs</b>		
HP 4GB (1x4GB) DDR3-1600 ECC Registered RAM	Z620, Z820	A2Z49AA
HP 8GB (1x8GB) DDR3-1600 ECC Registered RAM	Z620, Z820	A2Z51AA
HP 16GB (1x16GB) DDR3-1600 ECC Registered RAM	Z620, Z820	A2Z52AA
HP 32GB DDR3-1333 ECC Load Reduced (LR) RAM	Z820	A2Z53AA
<b>DDR3-1866 ECC Unbuffered DIMMs</b>		
HP 2GB (1x2GB) DDR3-1866 ECC RAM	Z1 G2, Z420, Z620, Z820	E2Q90AA
HP 4GB (1x4GB) DDR3-1866 ECC RAM	Z1 G2, Z420, Z620, Z820	E2Q91AA
HP 8GB (1x8GB) DDR3-1866 ECC RAM	Z1 G2, Z420, Z620, Z820	E2Q93AA
HP 4GB (1x4GB) DDR3-1866 nECC RAM	Z1 G2	E5Z83AA
<b>DDR3-1866 ECC Registered DIMMs</b>		
HP 4GB (1x4GB) DDR3-1866 ECC Reg RAM	Z620, Z820	E2Q92AA
HP 8GB (1x8GB) DDR3-1866 ECC Reg RAM	Z620, Z820	E2Q94AA
HP 16GB (1x16GB) DDR3-1866 ECC Reg RAM	Z620, Z820	E2Q95AA
32GB DDR3-1333 ECC Load Reduced (LR) RAM	Z820	F1F33AA
<b>DDR4-2133 ECC Registered DIMMs</b>		
4GB DDR4-2133 ECC Registered RAM	Z440, Z640, Z840	J9P81AA
8GB DDR4-2133 ECC Registered RAM	Z440, Z640, Z840	J9P82AA
16GB DDR4-2133 ECC Registered RAM	Z440, Z640, Z840	J9P83AA
32GB DDR4-2133 ECC Load Reduced (LR) RAM	Z640, Z840	J9P84AA

### Technical Specifications

#### Introduction

Boost the capabilities of your HP Workstation and improve system performance and application responsiveness with low-cost, high-performance DDR3 and DDR4 memory from HP.

##### **Work smarter**

Improve start-up times with fewer delays during routine operations, run more programs simultaneously, and easily toggle between several open applications.

##### **Benefit from integrated ECC**

Help avoid errors that can corrupt data sets and introduce system issues with Error Checking and Correcting technology that corrects single-bit memory errors.

##### **Get HP-tested reliability**

Ensure all of your memory characteristics match by upgrading with HP-branded memory that's been tested at the component level and to ensure seamless system-level integration with HP products

##### **Supported by HP**

Protect your investment with a warranty that is backed by the same award-winning HP service and support you get for your workstation.<sup>1</sup>

---

**NOTE:** When adding memory, it is important to use comparable DIMMs to those already installed. Adding faster DIMMs will increase the amount of memory but system memory will still run at the speed of the slowest DIMM. Because of the continuous development and enhancement of high-performance software applications and operating systems, the minimum memory requirements are increasing with each new software version. Therefore, to maintain the same level of system performance, it is recommended that customers add more memory when they buy new software or upgrade to newer versions of software.

---

#### Key Benefits

- Faster start-up times with fewer delays during routine operations
  - More programs running simultaneously
  - Easy toggling between several open applications
  - Rigorous supplier qualification processes for ensured quality
  - Thoroughly tested by HP for high reliability
- 

#### Compatibility

- See Model compatibility list on Pg.1.
- 

#### Service and Support

<sup>1</sup> Your Option Limited Warranty is a one (1) year parts replacement limited warranty on any HP-branded or Compaq-branded options (HP Options). If your HP Option is installed in an HP Hardware Product, HP may provide warranty service either for the HP

### Technical Specifications

Option Limited Warranty Period or the remaining Limited Warranty Period of the HP Hardware Product in which the HP Option is being installed, whichever period is the longer but not to exceed three (3) years from the date you purchased the HP Option.

---

<b>DDR4 Memory DIMMs</b>	<b>Dimensions (WxHxD)</b>	5.26 x 1.24 x 0.29in (13.35 x 3.14 x 0.73cm)
	<b>Weight</b>	0.87oz (24.7g)
<b>DDR3 Memory DIMMs</b>	<b>Dimensions (WxHxD)</b>	5.26 x 1.20 x 0.30in (13.35 x 3.05 x 0.755cm)
	<b>Weight</b>	1.1oz (31.2g)

Operating Systems supported: All supported versions of Microsoft Windows 7, 8 and 8.1. No driver is required for this device. Native support is provided by the operating system.

---

### Summary of Changes

<b>Date of change:</b>	<b>Version History:</b>		<b>Description of change:</b>
<b>August 1, 2012</b>	From Version 1 to 2	Changed	Changes made throughout the entire QuickSpec
<b>July 1, 2014</b>	From v2 to v3	Changed	Updates throughout all Quickspecs document
<b>April 1, 2014</b>	From v3 to v4	Changed	Updates throughout all document

© Copyright 2015 Hewlett-Packard Development Company, L.P.

The only warranties for HP products and services are set forth in the express warranty statements accompanying such products and services. Nothing herein should be construed as constituting an additional warranty. HP shall not be liable for technical or editorial errors or omissions contained herein. The information contained herein is subject to change without notice.

### Overview

### Models

### Workstations Supported

### Part Number

#### DDR3-1600 ECC Unbuffered DIMMs

HP 4GB (1x4GB) DDR3-1600 nECC RAM

Z1, Z230 CMT/SFF

B1S53AA

HP 8GB (1x8GB) DDR3-1600 non-ECC RAM

Z230 CMT/SFF

B1S54AA

#### DDR3-1866 ECC Unbuffered DIMMs

HP 2GB (1x2GB) DDR3-1866 ECC RAM

Z1 G2, Z420, Z620, Z820

E2Q90AA

HP 4GB (1x4GB) DDR3-1866 ECC RAM

Z1 G2, Z420, Z620, Z820

E2Q91AA

HP 8GB (1x8GB) DDR3-1866 ECC RAM

Z1 G2, Z420, Z620, Z820

E2Q93AA

HP 4GB (1x4GB) DDR3-1866 nECC RAM

Z1 G2

E5Z83AA

#### DDR3-1866 ECC Registered DIMMs

HP 4GB (1x4GB) DDR3-1866 ECC Reg RAM

Z620, Z820

E2Q92AA

HP 8GB (1x8GB) DDR3-1866 ECC Reg RAM

Z620, Z820

E2Q94AA

HP 16GB (1x16GB) DDR3-1866 ECC Reg RAM

Z620, Z820

E2Q95AA

32GB DDR3-1333 ECC Load Reduced (LR) RAM

Z820

F1F33AA

#### DDR4-2133 ECC Registered DIMMs

4GB DDR4-2133 ECC Registered RAM

Z440, Z640, Z840

J9P81AA

8GB DDR4-2133 ECC Registered RAM

Z440, Z640, Z840

J9P82AA

16GB DDR4-2133 ECC Registered RAM

Z440, Z640, Z840

J9P83AA

32GB DDR4-2133 ECC Load Reduced (LR) RAM

Z640, Z840

J9P84AA

64GB DDR4-2133 ECC Load Reduced (LR) RAM (4x16GB)

Z640, Z840

M4Z04AA

#### DDR4-2133 ECC Unbuffered DIMMs

4GB DDR4-2133 ECC Unbuffered RAM

Z240 SFF/TWR/Z238 MT

N0H86AA

4GB DDR4-2133 non-ECC Unbuffered RAM

Z240 SFF/TWR/Z238 MT

T0E50AA

8GB DDR4-2133 ECC Unbuffered RAM

Z240 SFF/TWR/Z238 MT

N0H87AA

8GB DDR4-2133 non-ECC Unbuffered RAM

Z240 SFF/TWR/Z238 MT

T0E51AA

16GB DDR4-2133 ECC Unbuffered RAM

Z240 SFF/TWR/Z238 MT

N0H88AA

16GB DDR4-2133 non-ECC Unbuffered RAM

Z240 SFF/TWR/Z238 MT

T0E52AA

#### DDR4-2133 ECC SODIMMs

4GB DDR4-2133 non-ECC SODIMM RAM

Z1 G3

T0H89AA

8GB DDR4-2133 ECC SODIMM RAM

Z1 G3

T0H92AA

8GB DDR4-2133 non-ECC SODIMM RAM

Z1 G3

T0H92AA

16GB DDR4-2133 ECC SODIMM RAM

Z1 G3

T0H93AA

16GB DDR4-2133 non-ECC SODIMM RAM

Z1 G3

T0H91AA

#### DDR4-2400 ECC Registered DIMMs

HP 4GB (1x4GB) DDR4-2400 ECC Reg RAM

Z440, Z640, Z840

T9V38AA

HP 8GB (1x8GB) DDR4-2400 ECC Reg RAM

Z440, Z640, Z840

T9V39AA





### Overview

HP 16GB (1x16GB) DDR4-2400 ECC Reg RAM	Z440, Z640, Z840	T9V40AA
HP 32GB (1x32GB) DDR4-2400 ECC Reg RAM	Z640, Z840	T9V41AA
HP 64GB (1x64GB) DDR4-2400 ECC LR RAM	Z640, Z840	T9V42AA
HP 128GB (1x128GB) DDR4-2400 ECC LR RAM	Z640, Z840	T9V43AA

### Technical Specifications

#### Introduction

Boost the capabilities of your HP Workstation and improve system performance and application responsiveness with low-cost, high-performance DDR3 and DDR4 memory from HP.

##### **Work smarter**

Improve start-up times with fewer delays during routine operations, run more programs simultaneously, and easily toggle between several open applications.

##### **Benefit from integrated ECC**

Help avoid errors that can corrupt data sets and introduce system issues with Error Checking and Correcting technology that corrects single-bit memory errors.

##### **Get HP-tested reliability**

Ensure all of your memory characteristics match by upgrading with HP-branded memory that's been tested at the component level and to ensure seamless system-level integration with HP products

##### **Supported by HP**

Protect your investment with a warranty that is backed by the same award-winning HP service and support you get for your workstation.<sup>1</sup>

---

**NOTE:** When adding memory, it is important to use comparable DIMMs to those already installed. Adding faster DIMMs will increase the amount of memory but system memory will still run at the speed of the slowest DIMM. Because of the continuous development and enhancement of high-performance software applications and operating systems, the minimum memory requirements are increasing with each new software version. Therefore, to maintain the same level of system performance, it is recommended that customers add more memory when they buy new software or upgrade to newer versions of software.

---

#### Key Benefits

- Faster start-up times with fewer delays during routine operations
  - More programs running simultaneously
  - Easy toggling between several open applications
  - Rigorous supplier qualification processes for ensured quality
  - Thoroughly tested by HP for high reliability
-

### Technical Specifications

#### Compatibility

- See Model compatibility list on Pg.1.
- 

#### Service and Support

<sup>1</sup>Your Option Limited Warranty is a one (1) year parts replacement limited warranty on any HP-branded or Compaq-branded options (HP Options). If your HP Option is installed in an HP Hardware Product, HP may provide warranty service either for the HP Option Limited Warranty Period or the remaining Limited Warranty Period of the HP Hardware Product in which the HP Option is being installed, whichever period is the longer but not to exceed three (3) years from the date you purchased the HP Option.

---

<b>DDR4 Memory DIMMs</b>	<b>Dimensions (WxHxD)</b>	5.26 x 1.24 x 0.29in (13.35 x 3.14 x 0.73cm)
	<b>Weight</b>	0.87oz (24.7g)
<b>DDR3 Memory DIMMs</b>	<b>Dimensions (WxHxD)</b>	5.26 x 1.20 x 0.30in (13.35 x 3.05 x 0.755cm)
	<b>Weight</b>	1.1oz (31.2g)

Operating Systems supported: All supported versions of Microsoft Windows 7, 8, 8.1, and 10. No driver is required for this device. Native support is provided by the operating system.

---

### Summary of Changes

<b>Date of change:</b>	<b>Version History:</b>		<b>Description of change:</b>
<b>August 1, 2012</b>	From v1 to v2	Changed	Changes made throughout the entire QuickSpec
<b>July 1, 2014</b>	From v2 to v3	Changed	Updates throughout all Quickspecs document
<b>April 1, 2014</b>	From v3 to v4	Changed	Updates throughout all document
<b>July 1, 2016</b>	From v4 to v5	Added	DDR4-2400 memory offerings
		Removed	All DDR3-1600 ECC registered DIMMs, and most DDR3-1600 ECC Unbuffered DIMMs

© Copyright 2016 HP Development Company, L.P.

The only warranties for HP products and services are set forth in the express warranty statements accompanying such products and services. Nothing herein should be construed as constituting an additional warranty. HP shall not be liable for technical or editorial errors or omissions contained herein. The information contained herein is subject to change without notice.

### Overview

#### Models

	Workstations Supported	Part Number
<b>DDR3-1600 ECC Unbuffered DIMMs</b>		
HP 4GB (1x4GB) DDR3-1600 nECC RAM	Z1, Z230 CMT/SFF	B1S53AA
HP 8GB (1x8GB) DDR3-1600 non-ECC RAM	Z230 CMT/SFF	B1S54AA
<b>DDR3-1866 ECC Unbuffered DIMMs</b>		
HP 2GB (1x2GB) DDR3-1866 ECC RAM	Z1 G2, Z420, Z620, Z820	E2Q90AA
HP 4GB (1x4GB) DDR3-1866 ECC RAM	Z1 G2, Z420, Z620, Z820	E2Q91AA
HP 8GB (1x8GB) DDR3-1866 ECC RAM	Z1 G2, Z420, Z620, Z820	E2Q93AA
HP 4GB (1x4GB) DDR3-1866 nECC RAM	Z1 G2	E5Z83AA
<b>DDR3-1866 ECC Registered DIMMs</b>		
HP 4GB (1x4GB) DDR3-1866 ECC Reg RAM	Z620, Z820	E2Q92AA
HP 8GB (1x8GB) DDR3-1866 ECC Reg RAM	Z620, Z820	E2Q94AA
HP 16GB (1x16GB) DDR3-1866 ECC Reg RAM	Z620, Z820	E2Q95AA
32GB DDR3-1333 ECC Load Reduced (LR) RAM	Z820	F1F33AA
<b>DDR4-2133 ECC Registered DIMMs</b>		
4GB DDR4-2133 ECC Registered RAM	Z440, Z640, Z840	J9P81AA
8GB DDR4-2133 ECC Registered RAM	Z440, Z640, Z840	J9P82AA
16GB DDR4-2133 ECC Registered RAM	Z440, Z640, Z840	J9P83AA
32GB DDR4-2133 ECC Load Reduced (LR) RAM	Z640, Z840	J9P84AA
64GB DDR4-2133 ECC Load Reduced (LR) RAM (4x16GB)	Z640, Z840	M4Z04AA
<b>DDR4-2133 ECC Unbuffered DIMMs</b>		
4GB DDR4-2133 ECC Unbuffered RAM	Z240 SFF/TWR/Z238 MT	NOH86AA
4GB DDR4-2133 non-ECC Unbuffered RAM	Z240 SFF/TWR/Z238 MT	TOE50AA
8GB DDR4-2133 ECC Unbuffered RAM	Z240 SFF/TWR/Z238 MT	NOH87AA
8GB DDR4-2133 non-ECC Unbuffered RAM	Z240 SFF/TWR/Z238 MT	TOE51AA
16GB DDR4-2133 ECC Unbuffered RAM	Z240 SFF/TWR/Z238 MT	NOH88AA
16GB DDR4-2133 non-ECC Unbuffered RAM	Z240 SFF/TWR/Z238 MT	TOE52AA
<b>DDR4-2133 ECC SODIMMs</b>		
4GB DDR4-2133 non-ECC SODIMM RAM	Z1 G3	TOH89AA
8GB DDR4-2133 ECC SODIMM RAM	Z1 G3	TOH92AA
8GB DDR4-2133 non-ECC SODIMM RAM	Z1 G3	TOH92AA
16GB DDR4-2133 ECC SODIMM RAM	Z1 G3	TOH93AA
16GB DDR4-2133 non-ECC SODIMM RAM	Z1 G3	TOH91AA
<b>DDR4-2400 ECC Registered DIMMs</b>		
HP 4GB (1x4GB) DDR4-2400 ECC Reg RAM	Z440, Z640, Z840	T9V38AA
HP 4GB (1x4GB) DDR4-2400 ECC RAM	Z2 Mini	1CA77AA
HP 4GB (1x4GB) DDR4-2400 non-ECC RAM	Z2 Mini	1CA78AA
HP 8GB (1x8GB) DDR4-2400 ECC Reg RAM	Z440, Z640, Z840	T9V39AA
HP 8GB (1x8GB) DDR4-2400 ECC RAM	Z2 Mini	1CA79AA
HP 8GB (1x8GB) DDR4-2400 non-ECC RAM	Z2 Mini	1CA80AA
HP 16GB (1x16GB) DDR4-2400 ECC Reg RAM	Z440, Z640, Z840	T9V40AA

### Overview

HP 16GB (1x16GB) DDR4-2400 ECC RAM	Z2 Mini	1CA75AA
HP 16GB (1x16GB) DDR4-2400 non-ECC RAM	Z2 Mini	1CA76AA
HP 32GB (1x32GB) DDR4-2400 ECC Reg RAM	Z640, Z840	T9V41AA
HP 64GB (1x64GB) DDR4-2400 ECC LR RAM	Z640, Z840	T9V42AA
HP 128GB (1x128GB) DDR4-2400 ECC LR RAM	Z640, Z840	T9V43AA

### Technical Specifications

#### Introduction

Boost the capabilities of your HP Workstation and improve system performance and application responsiveness with low-cost, high-performance DDR3 and DDR4 memory from HP.

##### **Work smarter**

Improve start-up times with fewer delays during routine operations, run more programs simultaneously, and easily toggle between several open applications.

##### **Benefit from integrated ECC**

Help avoid errors that can corrupt data sets and introduce system issues with Error Checking and Correcting technology that corrects single-bit memory errors.

##### **Get HP-tested reliability**

Ensure all of your memory characteristics match by upgrading with HP-branded memory that's been tested at the component level and to ensure seamless system-level integration with HP products

##### **Supported by HP**

Protect your investment with a warranty that is backed by the same award-winning HP service and support you get for your workstation.<sup>1</sup>

---

**NOTE:** When adding memory, it is important to use comparable DIMMs to those already installed. Adding faster DIMMs will increase the amount of memory but system memory will still run at the speed of the slowest DIMM. Because of the continuous development and enhancement of high-performance software applications and operating systems, the minimum memory requirements are increasing with each new software version. Therefore, to maintain the same level of system performance, it is recommended that customers add more memory when they buy new software or upgrade to newer versions of software.

---

#### Key Benefits

- Faster start-up times with fewer delays during routine operations
  - More programs running simultaneously
  - Easy toggling between several open applications
  - Rigorous supplier qualification processes for ensured quality
  - Thoroughly tested by HP for high reliability
-



### Technical Specifications

#### Compatibility

- See Model compatibility list on Pg.1.
- 

#### Service and Support

<sup>1</sup>Your Option Limited Warranty is a one (1) year parts replacement limited warranty on any HP-branded or Compaq-branded options (HP Options). If your HP Option is installed in an HP Hardware Product, HP may provide warranty service either for the HP Option Limited Warranty Period or the remaining Limited Warranty Period of the HP Hardware Product in which the HP Option is being installed, whichever period is the longer but not to exceed three (3) years from the date you purchased the HP Option.

---

<b>DDR4 Memory DIMMs</b>	<b>Dimensions (WxHxD)</b>	5.26 x 1.24 x 0.29in (13.35 x 3.14 x 0.73cm)
	<b>Weight</b>	0.87oz (24.7g)
<b>DDR3 Memory DIMMs</b>	<b>Dimensions (WxHxD)</b>	5.26 x 1.20 x 0.30in (13.35 x 3.05 x 0.755cm)
	<b>Weight</b>	1.1oz (31.2g)

Operating Systems supported: All supported versions of Microsoft Windows 7, 8, 8.1, and 10. No driver is required for this device. Native support is provided by the operating system.

---

### Summary of Changes

<b>Date of change:</b>	<b>Version History:</b>		<b>Description of change:</b>
<b>August 1, 2012</b>	From v1 to v2	Changed	Changes made throughout the entire QuickSpec
<b>July 1, 2014</b>	From v2 to v3	Changed	Updates throughout all Quickspecs document
<b>April 1, 2014</b>	From v3 to v4	Changed	Updates throughout all document
<b>July 1, 2016</b>	From v4 to v5	Added	DDR4-2400 memory offerings
		Removed	All DDR3-1600 ECC registered DIMMs, and most DDR3-1600 ECC Unbuffered DIMMs
<b>June 1, 2017</b>	From v5 to v6	Added	16GB, 8GB & 4GB DDR4-2400 non-ECC & ECC RAM for the Z2 Mini

© Copyright 2017 HP Development Company, L.P.

The only warranties for HP products and services are set forth in the express warranty statements accompanying such products and services. Nothing herein should be construed as constituting an additional warranty. HP shall not be liable for technical or editorial errors or omissions contained herein. The information contained herein is subject to change without notice.