

**RAMMon v1.0 Build: 1014 built with SysInfo v1.0 Build: 1087**  
**PassMark (R) Software - [www.passmark.com](http://www.passmark.com)**

Memory Summary For JOJO-MONSTERPC

Number of Memory Devices: 2 Total Physical Memory: 16259 MB (16384 MB)  
Total Available Physical Memory: 13356 MB  
Memory Load: 17%

Item	Slot #1	Slot #2	Slot #3	Slot #4
Ram Type	DDR3	DDR3	Not Populated	Not Populated
Maximum Clock Speed (MHz)	1067 (XMP)	1067 (XMP)		
Maximum Transfer Speed (MHz)	DDR3-2133	DDR3-2133		
Maximum Bandwidth (MB/s)	PC3-17000	PC3-17000		
Memory Capacity (MB)	8192	8192		
Jedec Manufacture Name	Corsair	Corsair		
Search Amazon.com	Search!	Search!		
SPD Revision	1.1	1.1		
Registered	No	No		
ECC	No	No		
DIMM Slot #	1	2		
Manufactured				
Module Part #	CMD16GX3M2A2133C9	CMD16GX3M2A2133C9		
Module Revision	0x0	0x0		
Module Serial #	0x0	0x0		
Module Manufacturing Location	1	1		
# of Row Addressing Bits	16	16		
# of Column Addressing Bits	10	10		
# of Banks	8	8		
# of Ranks	2	2		
Device Width in Bits	8	8		
Bus Width in Bits	64	64		
Module Voltage	1.5V	1.5V		
CAS Latencies Supported	6 7 9	6 7 9		
Timings @ Max Frequency (JEDEC)	9-9-9-24	9-9-9-24		
Maximum frequency (MHz)	667	667		
Maximum Transfer Speed (MHz)	DDR3-1333	DDR3-1333		
Maximum Bandwidth (MB/s)	PC3-10600	PC3-10600		
Minimum Clock Cycle Time, tCK (ns)	1.500	1.500		
Minimum CAS Latency Time, tAA (ns)	13.125	13.125		
Minimum RAS to CAS Delay, tRCD (ns)	13.125	13.125		
Minimum Row Precharge Time, tRP (ns)	13.125	13.125		
Minimum Active to Precharge Time, tRAS (ns)	36.000	36.000		
Minimum Row Active to Row Active Delay, tRRD (ns)	6.000	6.000		
Minimum Auto-Refresh to Active/Auto-Refresh Time, tRC (ns)	48.125	48.125		
Minimum Auto-Refresh to Active/Auto-Refresh Command Period, tRFC (ns)	260.000	260.000		
DDR3 Specific SPD Attributes				
Write Recovery Time, tWR (ns)	15.000	15.000		
Internal Write to Read Command Delay, tWTR (ns)	7.500	7.500		
Internal Read to Precharge Command Delay, tRTP (ns)	7.500	7.500		
Minimum Four Activate Window Delay,	30.000	30.000		

tFAW (ns)				
RZQ / 6 Supported	Yes	Yes		
RZQ / 7 Supported	Yes	Yes		
DLL-Off Mode Supported	Yes	Yes		
Maximum Operating Temperature Range (C)	0-95	0-95		
Refresh Rate at Extended Operating Temperature Range	2X	2X		
Auto-self Refresh Supported	No	No		
On-die Thermal Sensor Readout Supported	No	No		
Partial Array Self Refresh Supported	Yes	Yes		
Thermal Sensor Present	No	No		
Non-standard SDRAM Type	Standard Monolithic	Standard Monolithic		
Module Type	UDIMM	UDIMM		
Module Height (mm)	30	30		
Module Thickness (front), (mm)	3	3		
Module Thickness (back), (mm)	3	3		
Module Width (mm)	133.5	133.5		
Reference Raw Card Used	Raw Card B Rev. 0	Raw Card B Rev. 0		
DRAM Manufacture				
XMP Attributes				
XMP Revision	1.3	1.3		
Enthusiast / Certified Profile				
Module voltage	1.65V	1.65V		
Clock speed (MHz)	1067	1067		
Transfer Speed (MHz)	DDR3-2133	DDR3-2133		
Bandwidth (MB/s)	PC3-17000	PC3-17000		
Minimum clock cycle time, tCK (ns)	0.938	0.938		
Supported CAS latencies	6 9	6 9		
Minimum CAS latency time, tAA (ns)	8.375	8.375		
Minimum RAS to CAS delay time, tRCD (ns)	10.313	10.313		
Minimum row precharge time, tRP (ns)	10.313	10.313		
Minimum active to precharge time, tRAS (ns)	29.063	29.063		
Supported timing at highest clock speed	9-11-11-31	9-11-11-31		
Minimum Row Active to Row Active Delay, tRRD (ns)	7.500	7.500		
Minimum Active to Auto-Refresh Delay, tRC (ns)	50.625	50.625		
Minimum Recovery Delay, tRFC (ns)	260.000	260.000		
Minimum Write Recovery time, tWR (ns)	15.000	15.000		
Minimum Write to Read CMD Delay, tWTR (ns)	7.500	7.500		
Minimum Read to Pre-charge CMD Delay, tRTP (ns)	7.500	7.500		
Minimum Four Activate Window Delay, tFAW (ns)	37.500	37.500		
Maximum Average Periodic Refresh Interval, tREFI (us)	7.813	7.813		
Write to Read CMD Turn-around Time Optimizations	No adjustment	No adjustment		
Read to Write CMD Turn-around Time	No adjustment	No adjustment		

Optimizations				
Back 2 Back CMD Turn-around Time	No adjustment	No adjustment		
Optimizations				
System CMD Rate Mode	1T	1T		