



## **MEMORY DIMM DDR4**

### **Description**

This document describes S3+ is a 512M x 64-bit (4GB) DDR4-2400 CL17 SDRAM (Synchronous DRAM), 1Rx8, memory module, based on eight of 512M x 8-bit FBGA components. The SPD is programmed to JEDEC standard latency DDR4- 2400 timing of 17-17-17 at 1.2V. Each 288-pin DIMM uses gold contact fingers. The electrical and mechanical specifications are as follows:

### **Features**

Power Supply: VDD = 1.2V Typical  
VDDQ = 1.2V Typical  
VPP = 2.5V Typical  
VDDSPD = 2.5V Typical  
Nominal and dynamic on-die termination (ODT) for data, strobe, and mask signals  
Low-power auto self refresh (LPASR)  
Data bus inversion (DBI) for data bus  
On-die VREFDQ generation and calibration  
Single-rank  
On-board I2 serial presence-detect (SPD) EEPROM  
8 internal banks; 2 groups of 8 banks each  
Fixed burst chop (BC) of 4 and burst length (BL) of 8 via the mode register set (MRS)  
Selectable BC4 or BL8 on-the-fly (OTF)  
Fly-by topology  
Terminated control command and address bus  
PCB: Height 1.23" (31.25mm)  
RoHS Compliant and Halogen-Free

### **Specifications**

CL (IDD) 17 cycles  
Row Cycle Time (tRCmin) 32ns(min.)  
Refresh to Active/Refresh Command Time (tRFCmin) 350ns(min.)  
Row Active Time (tRASmin) 32ns(min.)  
Maximum Operating Power TBD W\*  
UL Rating 94 V - 0  
Operating Temperature 0° C to +85° C  
Storage Temperature -55°C to +100°C  
\*Power will vary depending on the SDRAM used.