

# ATP Industrial Grade Endura Specification

Revision 1.4



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**Revision History**

| Date                         | Version | Changes compared to previous issue  |
|------------------------------|---------|-------------------------------------|
| Dec. 16 <sup>th</sup> , 2011 | 1.0     | - 1 <sup>st</sup> version           |
| Feb. 8 <sup>th</sup> , 2012  | 1.1     | - Revised dimensions                |
| May. 22 <sup>nd</sup> , 2012 | 1.2     | - Add 8GB product                   |
| Aug. 3 <sup>rd</sup> , 2012  | 1.3     | - Revised 2GB P/N and Performance   |
| Aug. 20 <sup>th</sup> , 2012 | 1.4     | - Revised 512MB P/N and Performance |

## Images



*\*Laser engraving logo and letters.*

## Capacities

| ATP UFD P/N          | CAPACITY | COLOR |
|----------------------|----------|-------|
| AF512UFEDBK(I)-AABXX | 512MB    | Black |
| AF1GUFEDBK(I)-8AAXX  | 1GB      | Black |
| AF2GUFEDBK(I)-JABXX  | 2GB      | Black |
| AF4GUFEDBK(I)-JABXX  | 4GB      | Black |
| AF8GUFEDBK(I)-9AAXX  | 8GB      | Black |

## Features

| USB Interface                                                                                                                                                                                    | UFD Feature                                                                                                 |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>High Speed USB 2.0 (480Mbps) compliant and backward compatible with USB1.1 (12Mbps)</li> <li>True “Plug and play” connection support hot swap.</li> </ul> | <ul style="list-style-type: none"> <li>SIP technology with SLC NAND Flash</li> <li>Color - Black</li> </ul> |

| System Support                                                                                                                                                                                                 |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>No driver needed for Windows 7 / Vista / 2000 / ME / XP, Mac. OS 9.x or above. Linux Kernel 2.4.0 or above</li> <li>Device driver is needed for Windows 98SE</li> </ul> |

*Your Ultimate Memory Solution!*



## **Electrical Specifications**

| Symbol | Parameter                        | Min. | Typ. | Max. | Unit |
|--------|----------------------------------|------|------|------|------|
| Vcc    | Recommend Supply Voltage         | 4.5  | 5.0  | 5.5  | V    |
| Vpeak  | Peak Voltage on any pin          | -0.3 |      | 5.5  | V    |
| Icc    | Operating Current (read & write) |      | 100  |      | mA   |
| Isb    | Standby Current                  |      | 50   |      | mA   |

## **Environment Specifications:**

| Parameter                 |                  | Value                               |
|---------------------------|------------------|-------------------------------------|
| Temperature               | Operating        | -40°C to 85°C                       |
|                           | Non-Operating    | -40°C to 85°C                       |
| Humidity                  | Operating        | 25 °C, 95% RH                       |
|                           | Non-Operating    | 40 °C, 93% RH                       |
| ESD<br>(IEC61000-4-2)     | Non contact pads | +/- 15KV ( Air discharge )          |
|                           | Contact pads     | +/- 8KV (Coupling plane discharge)  |
|                           | Contact pads     | +/- 4KV                             |
| Salt Water Spray          | Non-Operating    | 3%NaCl/35, Over 85%RH, 24hours      |
| Drop Test                 | Non-Operating    | 150cm/free fall, total 6 drops      |
| Random Vibration          | Non-Operating    | 10~2000Hz, 6 Grms, 30 mins per axis |
| UV Light<br>Exposure Test | Non-Operating    | 254nm, 15Ws/cm2                     |

## **Reliability:**

MTBF@25°C: >5,000,000 hours (Telcordia/Bellcore SR-332)

Dynamic and Static wear leveling algorithm to improve the endurance

Endurance : SLC flash block >60,000 Program/Erase cycles

**Performance:**

| Type  | Parameter        | Value           |
|-------|------------------|-----------------|
| 512MB | Sequential read  | up to 18MByte/s |
|       | Sequential write | up to 12MByte/s |
| 1GB   | Sequential read  | up to 35MByte/s |
|       | Sequential write | up to 17MByte/s |
| 2GB   | Sequential read  | up to 31MByte/s |
|       | Sequential write | up to 14MByte/s |
| 4GB   | Sequential read  | up to 33MByte/s |
|       | Sequential write | up to 22MByte/s |
| 8GB   | Sequential read  | up to 20MByte/s |
|       | Sequential write | up to 19MByte/s |

**Extra Features:**

| Type            | Value |
|-----------------|-------|
| Water Proof     | Yes   |
| Dust Proof      | Yes   |
| ESD Proof       | Yes   |
| Shock Resistant | Yes   |

**Certifications**

- RoHS compliant
- CE certification
- FCC certification

**Physical Dimension Specifications (Units in MM):**

| Type      | Value             |
|-----------|-------------------|
| Length*   | 33.7mm +/- 0.3mm  |
| Width     | 17.5mm +/- 0.25mm |
| Thickness | 9.4mm +/- 0.25mm  |
| Weight*   | 8 g Max.          |

**Mechanical Form Factor (Units in MM)**