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Product Name : InnoDisk EDC 4000 Vertical
Required : Reliability Prediction

Purpose : Reliability prediction methodology provides the basis for reliability evaluation and analysis. The purpose of the prediction is to predict the lifetime of the product in units of failure rate and MTBF.

Results :

<table>
<thead>
<tr>
<th>Conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>MTBF</td>
</tr>
<tr>
<td>Description</td>
</tr>
</tbody>
</table>
1. Reliability Prediction :

Analysis Software /Database :
Name : Relex Reliability Studio 2008
Version : Relex Studio 2008

Prediction Method :

Analysis Method : The prediction method used was Telcordia SR-332, Issue 2, Parts Count
Failure rate(λ)=10^9 hours (FITs)
MTBF=1/λ

\[ \lambda_{SSi} = \lambda_{Gi} \pi_{Qi} \pi_{Si} \pi_{Ti} \]

Where \( \lambda_{Gi} \): Generic steady-state failure rate for device i
\( \pi_{Qi} \): Quality factor for device i
\( \pi_{Si} \): Stress factor for device i
\( \pi_{Ti} \): Temperature factor for device i

Calculation Parameter :
Operation Temperature : 25°C
Environment : Ground Fixed, Uncontrolled
Operation Stress : 50%(Voltage, Current, Power)
Method : Method I, Case 3

Note:
Telcordia:

The Telcordia model is based on the Telcordia document, Reliability Prediction Procedure for Electronic Equipment, Technical Reference SR-332. This standard, originally developed by AT&T Bell Lab as the Bellcore model, basically modified the component models in MIL-HDBK-217 to better reflect the failure rates that AT&T Bell Lab equipment was experiencing in the field. To support taking into account stress, burn-in, laboratory, or field data, this model supports different failure rate calculation methods. Telcordia includes the ability to perform a Parts Count or Parts Stress analysis. Relex supports Telcordia Issues 1 and 2 as well as Bellcore Issues 4, 5, and 6. Telcordia Issue 2, released in September 2006, replaces Telcordia Issue 1, released in May 2001. For information about the fields in Relex Reliability Studio specific to Telcordia Issue 2, refer to Telcordia Issue 2 Fields.
2 Prediction Result:

<table>
<thead>
<tr>
<th>Item</th>
<th>Failure Rate (FITs)</th>
<th>Predicted MTBF (Hours)</th>
</tr>
</thead>
<tbody>
<tr>
<td>InnoDisk EDC 4000 Vertical</td>
<td>84.380834</td>
<td>11,851,032</td>
</tr>
</tbody>
</table>

Note:
1. The result represent the failure rate and MTBF of the product according to Telcordia SR-332, Issue 2, Method I, Case 3 under Ground Fixed, Controlled environment, 50% operation stress.
2. Library components of a near equivalent or similar technology and function were substituted when the parts could not be exactly found in the library.
**Reliability Prediction Summary**

**File Name:** EDC 4000 Vertical  
**System:** DEXH  
**Ref Des:**  
**Description:** GF, GU - Ground Fixed, Uncontrolled

<table>
<thead>
<tr>
<th>Assembly Name</th>
<th>Part Number</th>
<th>Ref Des</th>
<th>Quantity</th>
<th>Failure Rate</th>
<th>MTBF</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDC 4000 Vertical</td>
<td>DEXH</td>
<td></td>
<td>1</td>
<td>84.380834</td>
<td>11,851,032</td>
</tr>
</tbody>
</table>

**Failure Rate:** 84.380834  
**MTBF (hrs):** 11,851,032  
**Temperature:** 25  
**Environment:** GF, GU - Ground Fixed, Uncontrolled
### File Name: EDC 4000 Vertical
### Assembly: DEXH
### Description:

#### Part Number | Description | Category | Quantity | Total Failure Rate
--- | --- | --- | --- | ---
4DE0H-D31-62-107 | PCB EDC 4000 40P with F3 | Connection | 1 | 9.396852
4DE4H-D31-43-107 | PCB EDC 4000 44Pin | Connection | 1 | 9.396852
5NSBGT4W2X5S | Samsung SLC 32GB TSOP 4die 2ce | Integrated Circuit | 2 | 24.523057
6D7ASQJ100C2 | InnoDisk 7A03B TQFP100(F3) | Integrated Circuit | 1 | 0.000000
7T0-FCV001-1 | IDE 40pin connector StraddleFool-Proofing | Connection | 1 | 7.224203
7T0-FCV000-1 | IDE 44pin connector Straddle Male | Connection | 1 | 7.224203
7TP-FSP000-3 | Power Connector 2Pin SMT-Female | Connection | 1 | 7.224203
7ZS-003Z00-1 | SWITCH Slide Switch | Switching Device | 1 | 0.000000
7ZS-805P00-1 | Polyswitch 0.5A 6V | Miscellaneous | 1 | 1.309109
7ZV-27V23-8 | Voltage Detector 2.7V SOT-23 | Integrated Circuit | 1 | 0.000000
9CM40U10-Z31 | MLCC | Capacitor | 10 | 3.931701
9CM604U7-Z21 | MLCC | Capacitor | 2 | 0.860127
9R16010K-501 | RESISTOR | Resistor | 1 | 1.072153
9R14022K-501 | RESISTOR | Resistor | 1 | 1.072153
9R14022R-501 | RESISTOR | Resistor | 3 | 2.828540
9R14033K-101 | RESISTOR | Resistor | 1 | 1.072153
9R14033R-501 | RESISTOR | Resistor | 16 | 13.498799
9R14082R-501 | RESISTOR | Resistor | 9 | 7.811038
9R14100K-501 | RESISTOR | Resistor | 1 | 1.072153
9R16000R-501 | RESISTOR | Resistor | 4 | 3.677723
9R14100R-501 | RESISTOR | Resistor | 1 | 1.072153

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**Reliability Prediction Summary**

| Failure Rate | 84.380834 |
| MTBF (hrs) | 11,851,032 |
| Temperature | 25 |
| Environment | GF, GU - Ground Fixed, Uncontrolled |
MTBF vs Temperatures

- GB, GC - Ground Benign, Controlled
- GF, GU - Ground Fixed, Uncontrolled