

Ethernet Extension Experts



Enable-IT 865 Series PoE & Extended Ethernet MTBF Studies



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INTRODUCTION

Enable-IT, Inc. Ethernet Extension technology is specifically designed to meet the high-performance and high-reliability requirements of Enterprise System OEMs in the netcom, military, medical, industrial control, and embedded computing markets. This document details the calculated MTBF in hours for various capacities of Enable-IT, Inc's 865 Long Reach Ethernet Kit.

MTBF CALCULATION GUIDELINES

The following data is based on the Telcordia SR-332 calculations:

$$MTBF = \frac{1 \times 10^9}{\{(\alpha \times \beta) + \lambda\}}$$

...where:

α = Intrinsic FIT rate for the solid-state memory component.

Note: The FIT rate prediction is calculated at 125°C, 3.3V with 60% confidence level.

β = Number of solid-state memory components.

λ = Intrinsic FIT rate for Enable-IT's VDSL2 Controller and passive components.

What's in Telcordia SR-332?

The Telcordia Standard allows reliability predictions to be performed using three methods:

- * Method I provides predictions based on a Parts Count procedure.
- * Method II provides predictions based on combining laboratory test data with Parts Count data.
- * Method III provides predictions based on combining field tracking data with Parts Count data.

All three methods are handled by the Reliability Workbench Prediction Module.
What can Telcordia do?

The Telcordia SR-332 Standard also provides models for predicting the failure rates of units and devices during the first year of operation.

The failure rate during this wear-in phase is expressed as a multiplying factor operating on the predicted steady-state failure rate. This First Year Multiplier (FYM) is influenced by burn-in times and temperatures. The Prediction Module automatically calculates the First Year Multiplier based on specified system, unit and device burn-in times and temperatures.

The Overview of the Prediction Module page contains a description of the features available in Reliability Workbench for building a Telcordia SR-332 model.

CALCULATED MTBF (HOURS)

This chart represents the results of the calculations per the Telcordia SR-332 methods in Reliability Workbench testing over the annual and ongoing testing in our labs for the 865 LRE Kit products. Results are an average of the three Telecordia Methods.

| PRODUCT | MTBF (Hours) | ENCLOSURE |
|----------------------------|--------------|---------------------|
| Enable-IT 865 LRE CO unit | 9,696,500 | Black ABS Wallmount |
| Enable-IT 865 LRE CPE unit | 8,400,000 | Black ABS Wallmount |

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