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Introduction to iQSFP Tester

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Outline

1. Problem Statements
2. Patent
3. Product Design Concepts
4. Product Information/Mechanical Design Improvements
5. Environmental Tests
7. Summary
Problem Statements

- When link failure occurs during deployment or post deployment at DCs, the troubleshoot process is complicated due to different network gears running simultaneously.
- Current diagnostic process associated with different physical locations will cause delay dramatically.
- There is no efficient portable device to debug the Optical QSFP transceivers in our day to day operation environment.
- The existing capital equipment does not support millions of transceiver on-time installations due to lack of proper identification of good/bad optics.
Key Features

- **DOM /EEPROM Monitoring**
- **PRBS capability options**
- **Power and Display Options**
- **QSFP cage**: prefer an easy way to replace the QSFP cage from the board-daughter card design-after 300 times of inserting/mating
- **GUI**: programmable with pass/fail criteria
- **Quick test time**: to provide simple pass/failure information-test time within 10 seconds per each QSFP
Product Design Review

- Colorful LED Display
- BER/Error Count Option
- Rechargeable battery for lasting 3 months
- Design for easy swap the daughter card
- Water resistance package
- Change the GUI to reset the pass/failure and resetting counts for the Insertion of QSFP
- Friendly reporting structure developed
Pass/Failure Criteria

Networks

Optional criteria
- Check error count
- Calculate BER

Main criteria
- Check pattern
  - Pass
- Check Tx Rx
  - Pass

Fail

Show Fail

In general, BER is the ratio of errored bits to the total number of bits transmitted, received, or processed over a defined amount of time. Mathematically, two formulas are often used to describe BER:

\[
BER = \frac{\text{number of errored bits}}{\text{total number of bits}}
\]

\[
BER = \frac{\text{error count in measurement period}}{\text{bit rate x measurement period}}
\]
Evaluation Tests

Result Item no.7 is different from our unit cause of we set the criteria pass/fail by Tx/Rx Power
Evaluation Tests

Testing when assembly:
- EDVT (Temp. pressure)
- Shock/Vibration/Temp.
- EMC
- Safety
- Compliance
Product Spec Review

Microsoft Word Document

NETWORKING
iQSFP Tester Info
iQSFP Packaging

Pizza Box

Notes:
1. Material: Single Wall B-Flute
   200# PSI Kraft Corrugate
2. All Dimension are in mm.
   Tolerance Should be +3mm, -3mm.
3. Inner Dimension: 176Wx279Lx103H mm.

Foam Top

Notes:
1. Material: EPS 20# Black
2. All Dimensions are in mm.
3. Tolerance Should be ±2mm.

Foam Bottom

Notes:
1. Material: EPS 20# Black
2. All Dimensions are in mm.
3. Tolerance Should be ±2mm.
# Environmental Tests

The iQSFp Tester has been tested to the following standard and pass.

<table>
<thead>
<tr>
<th>Testing Standard</th>
<th>Test Description</th>
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</thead>
<tbody>
<tr>
<td>IEC 60068-2-1 2007</td>
<td>Storage Temperature Testing</td>
</tr>
<tr>
<td>IEC 60068-2-2 2007</td>
<td>Storage Temperature Testing</td>
</tr>
<tr>
<td>IEC 60068 2-14 2009</td>
<td>Storage Temperature Testing</td>
</tr>
<tr>
<td>IEC 60068-2-30 2005</td>
<td>Non-Operating Humidity Testing</td>
</tr>
<tr>
<td>IEC 60068-2-6 2007</td>
<td>Mechanical Vibration Testing</td>
</tr>
<tr>
<td>IEC 60068-2-64 2008</td>
<td>Transportation Vibration Testing</td>
</tr>
<tr>
<td>IEC 60068-2-31 2008</td>
<td>Rough Handling Shock – Drop and Free Fall</td>
</tr>
<tr>
<td>IEC 60529 2013</td>
<td>Water Resistance Testing and Dust Ingress Testing (IP52)</td>
</tr>
<tr>
<td>IEC 60068-2-33</td>
<td>Thermal Shock Testing</td>
</tr>
<tr>
<td>IEC 60068-2-27</td>
<td>Mechanical Shock Testing</td>
</tr>
</tbody>
</table>
iQSFP Tester Rubber Boot

Tested to meet IP52 water and dust Ingression test
User Manual Review

QSFP Field Reader

Adobe Acrobat Document

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Summary

- iQSFP Tester is a portable device developed from patented concept to product within 1 year.
- iQSFP Tester offers cost effective solution to debug optical networking issue on site immediately.
- The product is ready for OCP community.
Call to Action

How to get involved in the project.

Timeline for Contribution Availability

Schedule if product is being promoted

Link to Contribution/Marketplace on OCP website

Where to find additional information (URL links)


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