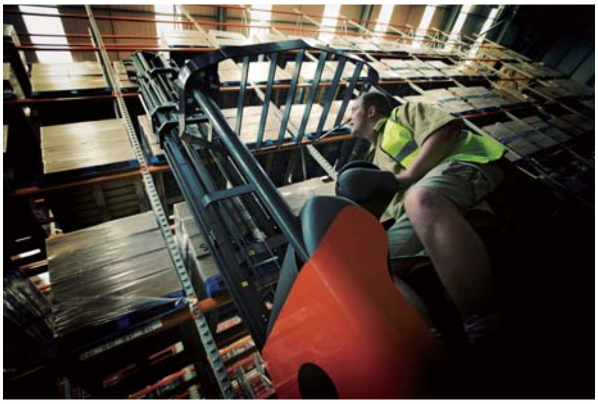
Forklift Vibrations & Shock for Tablet PC

WHY (Reason to Build This Technology)

Why Consumer Tablets and Purpose Built Forklift Mounted Rugged Tablets Are Not Interchangeable?



Tablet computing is one of the fastest-growing categories of consumer electronics and enterprise IT alike. Many businesses to explore new uses for consumer tablet computers, and some are finding their way into evaluation trials on forklifts and other vehicle applications in the distribution center. With their large screens, low cost and available Windows operating systems, or even with Android , Apple's iPad Pros tablets with high ingress protection (IP level) can seem quite an idea to the Rugged Tablet with forklift-mounted that are widely be considered today. However, consumer tablets should not be considered drop-in replacements for purpose-built forklift mounted Rugged Tablets because there are several major differences between the product categories.

HOW (Concept of This Technology)

This white paper reviews some of the important differences between consumer tablets and purpose-built Rugged Tablet Computers for forklifts, and presents the two key issues that must be considered when assessing tablet computers for forklift operators:

1. Vibration
2. Shock

A key distinction between normal tablets and purpose-built forklift mounted Rugged Tablet Computers is how they withstand vibration. Tablet mounted to forklifts experience substantial vibration, which can wear down internal components if the mounting doesn't properly protect the tablet as well as the tablet itself with concrete protection in rugged vibration. Shock and vibration resistance are core requirements for all vehicle-mounted tablets, but simply meeting a ruggedness standard and having an available mount are not enough to ensure reliable performance. This is why unitech design not only tablet itself with vibration and shock protections in highly requirements in US Military Standard but also a series vehicle mounting docks for forklift and mission critical vehicles.

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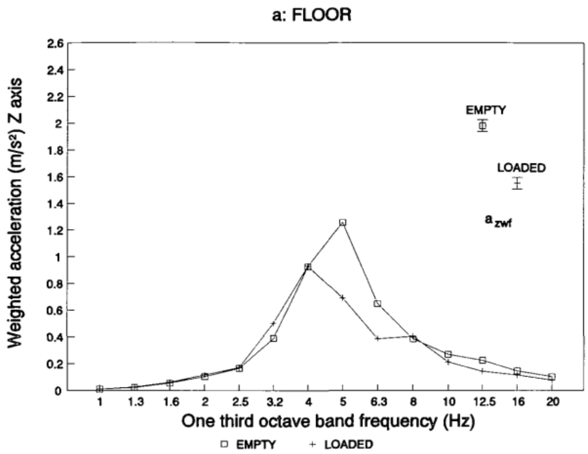
The unitech follows one of the most used measures of ruggedness today, the MIL-STD, a series of military standards that indicate the compliant device has successfully resisted shock and vibration in testing. MIL-STD 810G is a standard for military composite wheeled vehicles, and several manufacturers of forklift-mounted and other industrial computers test their products to this standard.



According to the 1996 British Occupational Hygiene Society research dissertation in topic of "VIBRATION EXPOSURE ON FORK-LIFT TRUCKS", the most critical vibration for forklift truck is "Z" axis vibration. The highest frequency will be no more than 20Hz.

Source: 1996 British Occupational Hygiene Society
Research dissertation - VIBRATION EXPOSURE ON FORK-LIFT TRUCKS

For example, the unitech ultra rugged 10" tablet computer, it passed MIL-STD vibration in MIL-STD-810G, Method 514.6, Procedure I, Category4 – Transportation in Figure 514.6 C1, C2, C3 for:

1. Truck/Trailer/Tracked – Secured Cargo
2. Truck transportation over US highways
3. Composite two-wheeled trailer vibration exposure, e.g. forklift trailer
4. Mission/field transportation, e.g. Humvee

Their test criteria's frequency is around 10-50Hz in tablet operating status as well as the frequency around 20-2000 Hz in none operating. These critical test standards cover all situations in forklift application. Still more, the unitech TB160 ultra rugged tablet passed the MIL-STD-810G, Method 516.6, Procedure I shock test in frequency of 20-2000 Hz, sawtooth pulse, with tablet operating total 18 shocks of each axis 3 shocks.
These critical tests to make sure both unitech tablets and forklift vehicle mounts are able to survive not only in forklift trucks but also many circumstances.

WHAT (Case Study Benefits)

The unitech ultra rugged tablet – TB160 has beyond the forklift vibration criteria in passing the US Military standard, MIL-STD-810G is an assurance for lasting customer's investments and equipment of computing to save the maintained costs. The forklift vibration is a sort of killer for tearing tablets inside components, but with unitech TB160's design for resisting the vibration and shocks, this device makes sure customers to protect not only the valuable data inside but also the costs. It is an idea to increase the productivity for associates to use a reliable tablet computer in forklift applications rather than iPads.

Note: "MIL-STD-810G" supports models - TB160