

# Toughpad FZ-M1 Certifications



## **MIL-STD-461F**

The Toughpad® FZ-M1 is tested to the MIL-STD-461F standard methodology for electromagnetic interference (EMI) and electromagnetic compatibility (EMC) in Panasonic's R&D facility in Japan and certified by a third party. The certification ensures that Panasonic computers are electromagnetically compatible with other nearby electronic equipment. Certified Panasonic computers do not generate unwanted electromagnetic energy that could interfere with the operation of other equipment, nor are susceptible to the effects of unwanted electromagnetic energy from equipment in the same vicinity. Panasonic has various certifications that meet federal requirements for rugged computers. [DOWNLOAD MIL-STD-461F REPORT](#)



## **MIL-STD-810G**

The Toughpad® FZ-M1 is MIL-STD-810G certified for a range of extreme conditions including 60" drops<sup>1</sup>, shocks, vibration, humidity, altitude, explosive atmosphere, rain-, dust- and sand-resistance, temperature extremes and thermal shock. Each of the twenty-one MIL-STD-810G tests conducted have been certified by independent lab testing. MIL-STD-810G, which was created in October 2008, supersedes MIL-STD-810F. [DOWNLOAD MIL-STD-810G REPORT](#)



## **Ingress Protection (IP65)**

The Toughpad® FZ-M1 is IP65 certified<sup>1</sup> according to the IP code defined in the international standard IEC 60529. The products are tested and certified by an independent test lab facility located in the United States. Rather than vaguely describing equipment as "waterproof" or "dustproof", the IP Code uniformly quantifies various levels of resistance to liquids, particulates and solid objects. The numbers following the letters "IP" represent the specific degree of protection provided by electrical enclosures. The first digit (6) indicates the ingress of dust at a level that will not have a harmful effect on the operation of the unit. The second digit (5) indicates that water sprayed from all directions will not compromise the computer's functioning. Higher numbers indicate a higher tolerance to dust and water. For example, a unit with an IP65 rating will withstand both elements better than a unit with an IP54 rating. While IP65-certified Panasonic computers are not completely impervious to the ingress of water or dust, the rating does indicate neither element will cause operational complications while used under conditions commonly encountered by Panasonic rugged computers. [DOWNLOAD IP65 REPORT](#)

# **ANSI**

## **Hazardous Locations**

American National Standards Institute (ANSI) reviews safety standards, include Hazardous Locations, every 5 years. In July 2012, UL 1604 — Electrical Equipment for Use in Class I and II, Division 2 Hazardous Locations — was withdrawn as the approved ANSI standard for use in the United States. UL1604 was replaced with ISA 12.12.01-2000 which has very similar requirements as UL1604 Hazardous Locations Class 1 Division 2.

ANSI 12.12.01-2000 Hazardous Locations certification allows products to be used in potentially explosive environments found in oil and gas, petrochemical, aviation and other industries. Select fully-rugged Toughbook® mobile computers can be configured to provide safe, reliable solutions for spark-free use. ANSI 12.12.01-2000 Hazardous Location approved models are available for use in Class I, Division 2, Groups A, B, C and D environments. These are defined as places where flammable gases, vapors and liquids are present during abnormal or accident conditions. [DOWNLOAD ANSI 12.12 REPORT](#)



### ENERGY STAR Qualification

ENERGY STAR, a joint program between the U.S. Environmental Protection Agency and U.S. Department of Energy, offers voluntary qualification for products that are energy efficient. The ENERGY STAR program sets high standards designed to save energy, save money and help protect the environment for future generations. Panasonic is one of nearly 20,000 organizations that have become ENERGY STAR partners, all working to promote, sell, or improve products, homes, and buildings that use less energy and qualify for the ENERGY STAR. Panasonic's commitment to ENERGY STAR initiatives and other environmental programs have resulted in all Toughbook® computers earning the ENERGY STAR.

ENERGY STAR for computers raises the efficiency bar dramatically. ENERGY STAR establishes efficiency requirements for all modes of a product's operation, which ensures energy savings when a product is active and running basic applications, as well as in low power modes. Qualifying products must also include an internal power supply that is at least 80 percent efficient. Only the most energy-efficient products, including all Toughbook computers have qualified for the new specification. If all computers sold in the US meet ENERGY STAR requirements, the savings in energy costs will grow to more than \$1.5 billion each year, reducing greenhouse gas emissions equivalent to those from 2 million vehicles. [READ MORE](#)



### EPEAT Certification

EPEAT is an easy-to-use, online tool to help purchasers in the public and private sectors evaluate, compare and select products based on their environmental attributes. EPEAT also provides a clear and consistent set of performance criteria for the design of products, and provides an opportunity for manufacturers to secure market recognition for their efforts to reduce the environmental impact of its products.

EPEAT evaluates electronic products according to three tiers of environmental performance — Bronze, Silver and Gold. There are 51 total environmental criteria: 23 required criteria and 28 optional criteria. A Bronze-rated product meets all 23 required criteria. A Silver-rated product meets all 23 required criteria plus at least 50% of the optional criteria. A Gold-rated product meets all 23 required criteria and at least 75% of the optional criteria. All Toughbook computer models are either gold- or silver-rated, ensuring the highest level of environmental performance. [READ MORE](#)



### ISO Certification

Since 1996, all Panasonic manufacturing plants worldwide—including the factory in Kobe, Japan—have achieved ISO 14001 registration and implemented the ISO 14001 Environmental Management System. The Kobe factory has also been certified for ISO 9001, an international standard for quality management systems that enhance product quality assurance and customer satisfaction.

International Organization for Standardization (ISO) is an international federation promoting the development of international manufacturing, trade, and communication standards. ISO 14000, a series of standards, provides the framework for managing the environmental impacts of an organization.

The ISO 14001 international standard established a systematic approach that organizations can use to minimize or prevent environmental impacts and risks. This approach, known as an Environmental Management System or EMS, requires the organization to establish an environmental control policy, educate employees about procedures and continually monitor environmental performance.



## RoHS Compliance

For manufacturers of electronic equipment, the main impact of RoHS is that only lead-free products can be sold in Europe. Panasonic has therefore shifted to lead-free solder. By selling RoHS-compliant products in all countries, not just Europe, Panasonic helps eliminate hazardous electronic waste materials from landfills and waste dumps around the world. [READ MORE](#)



## Verizon

Verizon Wireless delivers high-speed wireless access in 259 major metro areas, covering more than 280 million people. Panasonic Toughbook computers connect to the Verizon Wireless network without the need of a PC card or Wi-Fi hotspot. [READ MORE](#)



## AT&T

A United States wireless leader, AT&T has more than 72.9 million subscribers and offers the best coverage of any carrier worldwide<sup>1</sup>. Panasonic Toughbook mobile computers are designed with embedded wireless technology allowing instant access to AT&T's extensive high-speed network without the need for an external card, additional antenna or other accessories. [READ MORE](#)

<sup>1</sup> Tested by national independent third party lab following MIL-STD-810G Method 516.6 Procedure IV for transit drop test and IEC 60529 Sections 13.4, 13.6.2, 14.2.5 and 14.3 for IP65.