

# ***PocketShark PCIe WatchDog Timer™ (SKU-091-10)***

## **Hardware Manual**

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**October 13, 2023**

**Revision 1.0**

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# 1 About this Document

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## 1.1 Purpose

This document describes hardware installation, features, specification and operation of the *PocketShark* PCI Express WatchDog Timer™ from Amfeltec Corporation.

## 1.2 Feedback

AMFELTEC Corp. makes every effort to ensure that the information contained in this document is accurate and complete at the time of release. Please contact Amfeltec if you find any errors, inconsistency or have trouble understanding any part of this document.

To provide your feedback, please send an email to [support@amfeltec.com](mailto:support@amfeltec.com)

Your comments or corrections are greatly valued in our effort for excellence and continuous improvement.

## 1.3 Revision History

Rev. No.	Description	Rev. Date
1.0	Initial Release.	October 13, 2023

## 2 General Description

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### 2.1 Introduction

The PocketShark PCI Express WatchDog Timer board is the device that maximize the reliability of embedded appliance or IOT device that operate without human supervision. The Timer board is monitoring embedded appliance operation and can reboot the system in case system crash. The WatchDog Timer board is monitoring the signals from the appliance software that has to be send to the Timer in regular intervals. If the Timer board doesn't receive an expected signal with defined period of time, the Timer board generate the RESET signal for the motherboard to reboot system.

It is a 1U PCI Express board and connects to the motherboard via x1 PCI Express upstream connector. The WatchDog Timer board holds inside motherboard PCI express connector by using Amfeltec's PCI Express Retainer (US Pat. #7,850,475) without any brackets.

The Timer board can operate at industrial temperature rate (from -40°C up to +85°C).

## 2.2 Package Contents

PCIe WatchDog Timer package includes the following part:

1. WatchDog Timer

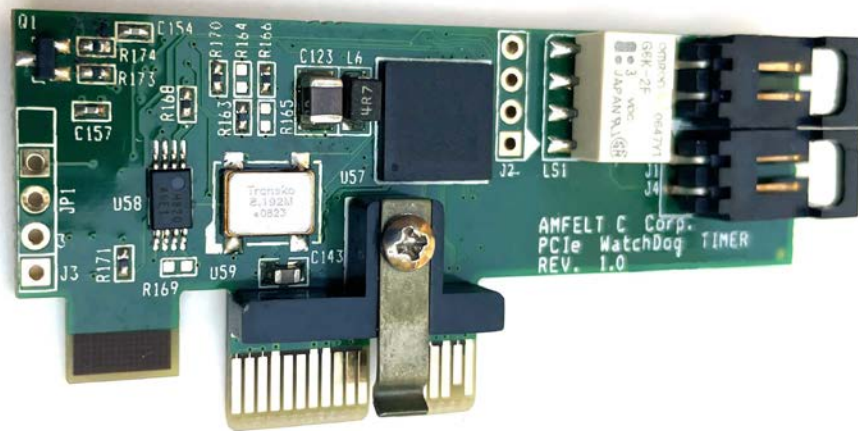


Figure 1: PocketShark PCIe WatchDog Timer



Figure 2: PocketShark PCIe WatchDog Timer (top view)

## **3 Features**

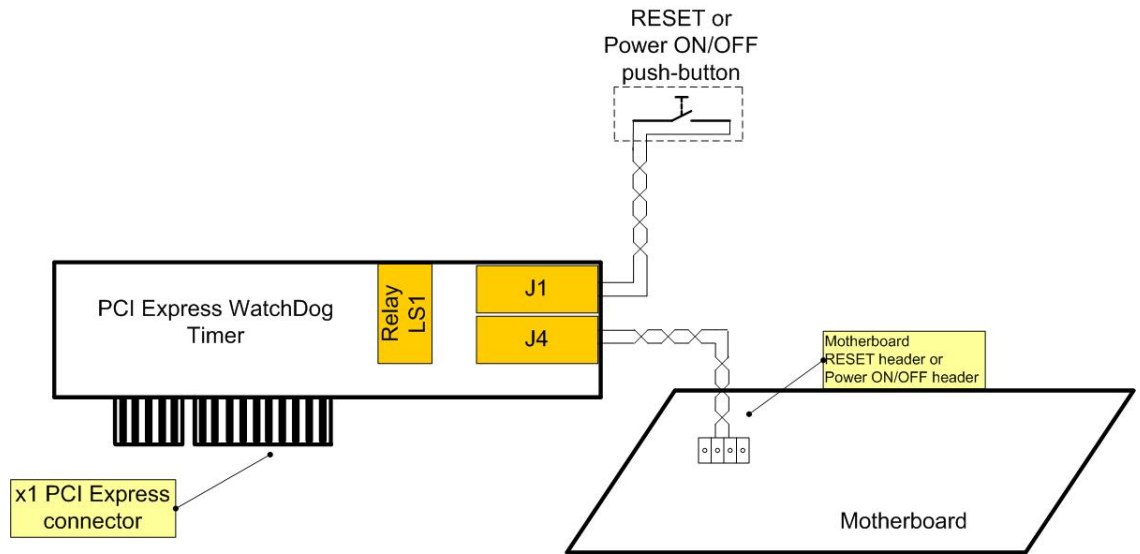
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### **3.1 Features**

- Easy ‘Plug and Play’ installation. No drivers are needed. Transparent to the operation system.
- Compatible with any motherboard.
- 1U PCI Express form factor
- x1 PCI express upstream connection to motherboard
- WatchDog timer interval setting from 1 ms to 4 minutes
- Relay hold interval setting from 1 ms to 255 ms
- Maximum switching voltage: 125 VAC/60VDC; current 1A
- Retained inside a computer without bracket by using Amfeltec PCIe Retainer (US.Pat. #9,996,475)
- Industrial operation temperature range from -40° C to +85°C
- Dimension: 2.6” x 1.8” (65 mm x 30 mm)
- RoHS compliant.



### 3.2 PCI Express WatchDog Timer connection.



PCI Express WatchDog Timer connection diagram

Figure 3: Carrier board internal block diagram.

## **4 Installation**

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### **4.1 WatchDog Timer board installation**

The following steps provide the exact sequence that needs to be followed in order to properly install the Amfeltec PCIe WatchDog Timer board:

- Turn OFF the computer/appliance before installation
- Remove the chassis cover
- Locate an unused PCI express slot
- Insert the board into the appropriate PCI Express slot
- Put the chassis cover back
- Turn ON the computer

### **4.2 WatchDog Timer board Power ON**

After computer Power ON the Timer has to be configured by using utility that setup the follow operation parameters:

- WatchDog timer interval (from 5 ms to 4 minutes)
- Relay hold interval (from 1 ms to 255 ms)
- Activate WatchDog Timer

## 5 Hardware Description

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### 5.1 Connectors

Ref. Des.	Type	Usage
J1, J4	Connectors	Connectors for Reset cables
U56	Connector	Upstream x1 PCI Express connector

Table 1: PCIe WatchDog Timer connectors

## **6 Appendix A: Limited warranty**

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