Space Dock Capture Ring Force Testing

Wireless Telemetry System

Industry: Aerospace

Summary

Customer Challenge

A space company wants to test their spacecraft docking simulator. They wish to test the forces of the actuators used during the “lunge”, when the soft capture ring is lunged forward to latch onto a space vehicle that has been mounted. They want to ensure they are working properly when engaged, and that it does not go past its overload force limit.

Interface Solution

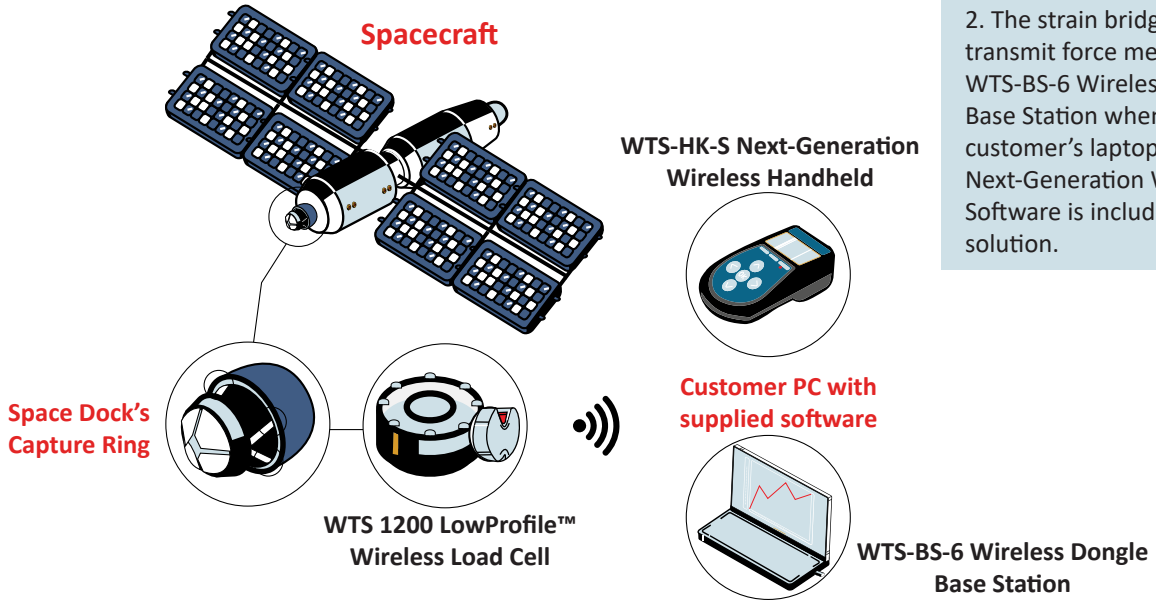
Interface suggests using multiple WTS 1200 Standard Precision LowProfile™ Wireless Load Cells to be installed to the actuators of the capture ring. Both as wireless solutions, measurements can be recorded through the WTS-AM-1E Wireless Strain Bridge Transmitter Module, which then can transmit to the WTS-HK-S Next-Generation Wireless Handheld or the WTS-BS-6 Wireless Telemetry Dongle Base Station for the customer to record, log, and graph on their computer.

Results

Interface’s Wireless telemetry system successfully measured the forces of the soft capture ring of the space docking port with overload protection.

Materials

- WTS 1200 Standard Precision LowProfile™ Wireless Load Cells
- WTS-HK-S Next-Generation Wireless Handheld
- WTS-AM-1E Wireless Strain Bridge Transmitter Module
- WTS-BS-6 Wireless Telemetry Dongle Base Station with supplied software
- Customer PC or Laptop



How It Works

1. The WTS 1200 Standard Precision LowProfile™ Wireless Load Cells are installed at the ends of the actuators. Each load cell is paired and connected to a WTS-AM-1E Wireless Strain Bridge Transmitter Module.
2. The strain bridge modules wirelessly transmit force measurements to the WTS-BS-6 Wireless Telemetry Dongle Base Station when connected to the customer’s laptop, or, the WTS-HK-S Next-Generation Wireless Handheld. Software is included for this wireless solution.

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