

# Cumulus Hardware Compatibility Guide

Document Version: 4.1  
Release Date: November 06, 2024

**Disclaimer:**

This software, hardware and related documentation are provided under a license agreement containing restrictions on use and disclosure and are protected by intellectual property laws. Except as expressly permitted in your license agreement or allowed by law, you may not use, copy, reproduce, translate, broadcast, modify, license, transmit, distribute, exhibit, perform, publish, or display any part, in any form, or by any means. Reverse engineering, disassembly, or decompilation of this software, unless required by law for interoperability, is prohibited.

The information contained herein is subject to change without notice and is not warranted to be error-free. If you find any errors, please report them to Cumulus Digital Systems, Inc. in writing to [support@cumulusds.com](mailto:support@cumulusds.com).

This software or hardware and documentation may provide access to or information on content, products, and services from third parties. Cumulus Digital Systems, Inc. and its affiliates are not responsible for and expressly disclaim all warranties of any kind with respect to third-party content, products, and services. Cumulus Digital Systems, Inc. and its affiliates will not be responsible for any loss, costs, or damages incurred due to your access to or use of third-party content, products, or services.

## Contents

|                                   |    |
|-----------------------------------|----|
| INTRODUCTION.....                 | 4  |
| MANUAL TORQUING.....              | 5  |
| TORQUE MULTIPLIERS.....           | 7  |
| DIGITAL PRESSURE GAUGES.....      | 8  |
| HYDRAULIC WRENCHES / PUMPS.....   | 9  |
| ELECTRIC TORQUE TOOLS .....       | 10 |
| DEVICE OVERVIEW .....             | 12 |
| RECOMMENDED ANDROID DEVICES ..... | 13 |
| RECOMMENDED iOS DEVICES .....     | 17 |

# INTRODUCTION

The Cumulus Quality Execution System (Cumulus) is an integrated platform allowing sites to implement industrial workflows utilizing Cumulus Control Center, Cumulus WorkFlow™ and the Cumulus Mobile App. The Cumulus mobile app can connect to a suite of tools including software applications, torque wrenches, digital gauges, and hydraulic pumps.

## Control Center

Control Center is a web application that provides industrial site monitoring and control capability to site supervisors, turn-around leads, maintenance leads, and quality inspectors. Control Center enables a site to build and maintain a digital connection register, capture work history, and ensure transparency of the industrial work process.

## Mobile App

The mobile app provides traceable digital records for each workflow. The app guides the team on which operations and actions to perform. Data on the worker activities are captured and transmitted to the central cloud-hosted database.

This document provides guidance and information regarding the Bluetooth-enabled tools that integrate with Cumulus Platform. *The tools are not manufactured by Cumulus Digital Systems; thus, Cumulus Digital Systems makes no warranties about the use or maintenance regarding the equipment.*

Please consult manufacturer documentation for latest details for all equipment. Cumulus is not responsible for errors or omissions included in this documentation. It is for representation and comparison purposes only. Technical specifications change frequently and without notice from the manufacturer.

# MANUAL TORQUING

Cumulus currently integrates with Snap-On CONTROLTECH and Norbar Protronic Plus digital torque wrenches for manual tightening. The wrenches are available in a variety of sizes and torque ranges. Optional features include Intrinsically Safe models, swappable heads, accessories, and attachments. Cumulus can help in selecting the proper models for your use case.

For more information please visit: <https://www.snapon.com/> or <https://www.norbarusa.com/> and contact your local representative.

## IS/EX - Class 1 Division 2 BLE Digital Torque Wrenches

| <b>Snap-on CONTROLTECH™- BLE DIGITAL TORQUE WRENCHES</b> |                     |                     |                           |
|--|---------------------|---------------------|---------------------------|
| Stock #  | <b>CTECHW1UA135</b> | <b>CTECHW1UB400</b> | <b>CTECHW1UR650</b>       |
| Bluetooth  | 4.1 BLE             | 4.1 BLE             | 4.1 BLE                   |
| Head Type  | 9x12 ISO Shank      | 14x18 ISO Shank     | 3/4" Sealed Fixed Ratchet |
| Torque Range, ft lb                                      | 5 to 99.6           | 14.8 to 295         | 24 to 479.4               |
| Torque Range, Nm   | 6.8 to 135          | 20 to 400           | 32.5 to 650               |
| Battery Type (Quantity)                                  | Rechargeable (1)    | Rechargeable (1)    | Rechargeable (1)          |
| C1 D2 IS/EX  | Yes                 | Yes                 | Yes                       |

## BLE Digital Torque Wrenches

| <b>Snap-on CONTROLTECH™- BLE DIGITAL TORQUE WRENCHES</b> |                     |                      |                      |
|--|---------------------|----------------------|----------------------|
| Stock #  | <b>CTECHWANM30</b>  | <b>CTECHWANM135</b>  | <b>CTECHWAN135A</b>  |
| Bluetooth  | 4.1 BLE             | 4.1 BLE              | 4.1 BLE              |
| Head Type  | 9x12 ISO Shank      | 9x12 ISO Shank       | 9x12 ISO Shank       |
| Torque Range, ft lb                                      | 1.11 to 22.13       | 5 to 99.5            | 5 to 99.6            |
| Torque Range, Nm   | 1.50 to 30          | 6.8 to 135           | 6.8 to 135           |
| Weight (lbs.)  | 0.8                 | 1.2                  | 2.7                  |
| Battery Type (Quantity)                                  | AA Lithium (1)      | AA Lithium (1)       | AA Lithium (3)       |
| C1 D2 IS/EX  | No                  | No                   | No                   |
|  |                     |                      |                      |
| Stock #  | <b>CTECHWBN340A</b> | <b>CTECHW4R650A</b>  | <b>CTECHW4R600A</b>  |
| Bluetooth  | 4.1 BLE             | 4.1 BLE              | 4.1 BLE              |
| Head Type  | 14x18 ISO Shank     | Sealed Fixed Ratchet | Sealed Fixed Ratchet |
| Torque Range, ft lb                                      | 12.5 to 250.8       | 24 to 479.4          | 30 to 600            |
| Torque Range, Nm   | 17 to 340           | 32.5 to 650          | 40.7 to 813.5        |
| Weight (lbs.)  | 3.8                 | 8.6                  | 10.5                 |
| Battery Type (Quantity)                                  | AA Lithium (3)      | AA Lithium (3)       | AA Lithium (3)       |
| C1 D2 IS/EX  | No                  | No                   | No                   |

| <b>Norbar Protronic Plus TORQUE WRENCHES</b> |                      |                 |                 |                |
|--|----------------------|-----------------|-----------------|----------------|
| Stock #                                      | <b>130512/130513</b> | <b>130514</b>   | <b>130515</b>   | <b>130516</b>  |
| Bluetooth                                    | 4.1 BLE              | 4.1 BLE         | 4.1 BLE         | 4.1 BLE        |
| Head Type                                    | Interchangeable      | Interchangeable | Interchangeable | Fixed          |
| Torque Range, ft lb                          | 3.7 to 73.5          | 7.4 to 147.5    | 12.6 to 250.7   | 29.5 to 590    |
| Torque Range, Nm                             | 5 to 100             | 10 to 200       | 17 to 340       | 40 to 800      |
| Battery Type (Quantity)                      | AA Lithium (3)       | AA Lithium (3)  | AA Lithium (3)  | AA Lithium (3) |
| C1 D2 IS/EX                                  | No                   | No              | No              | No             |

- BLE Digital Torque Screwdrivers

| <b>Snapon CONTROLTECH™ MICRO-BLE DIGITAL TORQUE SCREWDRIVE</b> |                     |                    |                     |                    |
|--|---------------------|--------------------|---------------------|--------------------|
| Stock #  | <b>CTECHWMS100F</b> | <b>CTECHWMS80F</b> | <b>CTECHWMS100M</b> | <b>CTECHWMS80M</b> |
| Head Type  | 1/4" Hex            | 1/4" Hex           | 1/4" Sq. Drive      | 1/4" Sq. Drive     |
| Torque Range, in oz  | 5 to 100            | 64 to 1280         | 5 to 100            | 64 to 1280         |
| Torque Range, in lb  | 0.31 to 6.25        | 4 to 80            | 0.31 to 6.25        | 4 to 80            |
| Length (IN)  | 7.5                 | 7.5                | 7.5                 | 7.5                |
| C1 D2 IS/EX  | No                  | No                 | No                  | No                 |

## Snap-on Accessories

### CTECHW1UA135 Replacement ratchet heads

- Replacement 3/8in ratchet head for [CTECH](#) 135Nm: [IzFRAT9X12](#)
- Replacement 1/2in ratchet head for [CTECH](#) 135Nm: [IzSRAT9X12](#)

CTECHW1UA135 Ring heads - Sizes available [here](#) - select only 9 X 12 ISO/IZO heads

CTECHW1UA135 Open-End heads - Sizes available [here](#) - select only 9 X 12 ISO/IZO heads

### CTECHW1UB400 Replacement ratchet heads

- Replacement 1/2in ratchet head for CTECH 400 Nm: [IzSRAT14X18](#)
- Replacement 3/4in ratchet head for CTECH 400 Nm: [IzLRAT14X18](#)

CTECHW1UB400 Ring Inserts - Sizes available [here](#) - select only 14 X 18 ISO/IZO heads

CTECHW1UB400 Open End Insert - Sizes available [here](#) - select only 14 X 18 ISO/IZO heads

# TORQUE MULTIPLIERS

The manual tightening wrenches may also have their effective range increased by using a torque multiplier. Cumulus supports any 2:1, 3:1, 4:1, or 5:1 multiplier on the market. The following models manufactured by Snap-on represent some simple and effective torque multipliers. When using a torque multiplier, mobile app users must specify both the wrench and torque multiplier ratio, so the mobile app applies the correct multiplication factor to the required torque. Cumulus will automatically set the smart wrench torque value to ensure the required torque is applied to the nut through the multiplier.

- [Snap-on MTMB740](#)
  - 1/2" Square Input, 3/4" Square Output 740 ft-lb Bar Style Manual Torque Multiplier
  - Compact dimensions allow excellent access and easy handling
  - Maximum torque output of 740 ft-lb / 1,000 Nm
  - Supplied with two reaction styles for maximum versatility
  - Accuracy guaranteed better than  $\pm 4\%$
  
- [Snap-on MTMB950](#)
  - 1/2" Square Input, 3/4" Square Output, 950 ft-lb Bar Style Manual Torque Multiplier
  - Compact dimensions allow excellent access and easy handling
  - Maximum torque output of 950 ft-lb / 1,300 Nm
  - Supplied with two reaction styles for maximum versatility
  - Accuracy guaranteed better than  $\pm 4\%$
  
- [Snap-on MTMB1990](#)
  - 3/4" Square Input, 1" Square Output, 1,990 ft-lb Bar Style Manual Torque Multiplier
  - Compact dimensions allow excellent access and easy handling
  - Maximum torque output of 1,990 ft-lb / 2,700 Nm
  - Supplied with two reaction styles for maximum versatility
  - Accuracy guaranteed better than  $\pm 4\%$
  - Supplied in a carrying case, which is ideal for heavy vehicle tool kits

# DIGITAL PRESSURE GAUGES

The digital pressure gauges can be connected to most commercially available hydraulic pumps (electric or pneumatic driven). Cumulus currently interfaces with the following devices for hydraulic torquing, tensioning and pressure testing:

- WIKA CPG1500
- ADDITEL 680A, 681A, 685

## WIKA CPG1500

The [CPG1500](#) has the following characteristics:

- Available in measuring ranges up to 150,00psi (10,000 bar)
- Accuracy: up to 0.025 % (standard .1 %)
- Intrinsically safe version available
- Available in multiple thread connection types



## Additel 680A, 681A, 685

The [685](#) has the following characteristics:

- Available in measuring ranges up to 60,000 psi (4,200 bar)
- Accuracy: 0.02%, 0.05%FS or 0.1%RD
- Intrinsically safe version available
- Available in multiple thread connection types
- **Data logging (optional)**



The [680A](#) has the following characteristics:

- Available in measuring ranges up to 60,000 psi (4,200 bar)
- Accuracy: 0.1% or 0.2%FS
- Intrinsically safe version available
- Available in multiple thread connection types
- Data logging included



The [681A](#) has the following characteristics:

- Available in measuring ranges up to 60,000 psi (4,200 bar)
- Accuracy 0.02% or 0.05% FS accuracy
- Intrinsically safe version available
- Available in multiple thread connection types
- Data logging included



Note: For digital Pressure Testing, the data logger option is highly recommended.



## HYDRAULIC WRENCHES / PUMPS

Cumulus supports most commercially available hydraulic wrenches and pumps as the digital pressure gauges (highlighted above) interact with the Cumulus Mobile App. Therefore, it is only necessary to obtain the respective pressure gauge with the proper threading/adaptor to connect to the pump itself. Hydraulic wrenches and pumps do not need modification. Brands we commonly integrate with include:

The Snap-on logo features the brand name in a bold, italicized, red sans-serif font with a registered trademark symbol.The Atlas Copco logo consists of the brand name in a blue, italicized serif font, centered between two horizontal blue bars.The SPX logo features the letters 'SPX' in a bold, grey sans-serif font, with the letter 'X' colored green.The hydratight logo shows the brand name in a bold, black sans-serif font, with a yellow horizontal bar underneath.The Hi-Force logo features the brand name in a bold, black serif font, with 'HYDRAULIC TOOLS' in a smaller, red sans-serif font below it.The TRITORC logo displays the brand name in a bold, red, all-caps sans-serif font.The torcUP logo features the brand name in a stylized, italicized font, with 'torc' in black and 'UP' in white on a black background, all within a yellow and black graphic element.The TORQLITE logo shows the brand name in a bold, blue and orange sans-serif font.The ENERPAC logo features the brand name in a bold, black sans-serif font, with a yellow background and a small icon to the right.The HYTORC logo displays the brand name in a bold, black serif font, with a red circle containing a white diagonal line over the letter 'O'.

Additionally, Cumulus pre-loads the pressure/torque conversion charts for each specific make and model of the hydraulic wrenches to perform mathematical computations to derive and record the proper torque. Therefore, please verify Cumulus has setup the hydraulic wrench model, or submit a ticket to load the conversion chart for the wrench make and model. Cumulus will assist customers in loading the tool list (serial numbers, calibration dates) upon request. Please contact [Support@cumulusds.com](mailto:Support@cumulusds.com) for more information.

## ELECTRIC TORQUE TOOLS

Cumulus interfaces with four (4) models of electric torque tools; the Hytorc Lithium Series II (LST), the Hytorc LION Gun, the Snapon Cordless Torque Multiplier (CTM) and the Norbar EvoTorque Battery Tool (EBT).

### Hytorc Lithium Series II

The [Lithium Series II](#) comes in five (5) models with varying torque ranges:

- LST-0700 (150 - 700 ft-lbs) -weight 11.7 lbs / 5.3 kg
- LST-1200 (200 - 1200 ft-lbs) -weight 12 lbs / 5.5 kg
- LST-2000 (325 - 2000 ft-lbs) -weight 16.6 lbs / 7.5 kg
- LST-3000 (500 - 3000 ft-lbs) -weight 17.7 lbs / 8.0 kg
- LST-5000 (800 - 5000 ft-lbs) -weight 22.4 lbs / 10.2 kg

The [Lithium Series II](#) has the following characteristics:

- Automatic torque values and settings applied via Cumulus Mobile App app
- 36V battery
- Compatible with conventional sockets, the HYTORC Washer, and HYTORC Nut
- Supplied with secondary side-assist handle
- Recommended 1-year calibration cycle from first use



## Hytorc LION Gun

The [LION GUN](#) comes in two (2) supported models with varying torque ranges:

- LIONGUN-.25-BSM (25 - 250 ft-lbs) -weight 7.3 lbs / 3.3 kg
- LIONGUN-.7-BSM (70 - 700 ft-lbs) -weight 8.2 lbs / 3.7 kg

Note: Ensure the proper model is -BSM. Non-Bluetooth LION Gun models are available.

The [LION GUN X](#) comes in two (2) supported models with varying torque ranges:

- LION GUN X 1000 (250 - 1000 ft-lbs) -weight 9.6 lbs / 4.4 kg
- LION GUN-X-3000 (600 - 300 ft-lbs) -weight 15.5 lbs / 7.0 kg

The tools have the following characteristics:

- Automatic torque values and settings applied via Cumulus Mobile App
- 18V battery for LION GUN and 36V battery for LION GUN X
- Compatible with conventional sockets, the HYTORC Washer, and HYTORC Nut
- Supplied with secondary side-assist handle
- Recommended 1-year calibration cycle from first use



## DEVICE OVERVIEW

Cumulus mobile app is available on both the Apple iOS and Google Android operating systems. As such, the application can run on most devices available in both the phone and tablet formats. The following devices are recommended by Cumulus and are meant as a guide. If you have an alternate device, please contact [Support@cumulusds.com](mailto:Support@cumulusds.com) to determine compatibility.

As of the date on this document:

- For Android, minimum supported version Android 10
- For IOS, minimum supported version is 17.5

Each device has pros and cons which should be carefully considered including EX options, NFC options, battery life and operating temperatures.

| <u>Brand</u>  | <u>Model</u>  | <u>LTE</u> | <u>Screen Size</u> | <u>Battery</u> | <u>Operating Temperature</u> |
|---------------|---------------|------------|--------------------|----------------|------------------------------|
| Apple         | iPad          | Yes        | Multiple           | 8827mAh        | 0 C - 35 C                   |
| i.safe MOBILE | IS930.1       | Yes        | 8"                 | 8400mAh        | -20 C - 60 C                 |
| i.safe MOBILE | IS930.2       | Yes        | 8"                 | 8400mAh        | -20 C - 60 C                 |
| eCom          | Tab-Ex 03 DZ2 | Yes        | 8"                 | 5050mAh        | -20 C - 55 C                 |
| Sonim         | XP8           | Yes        | 5"                 | 4900mAh        | -20 C - 55 C                 |
| Samsung       | Tab Active3   | Yes        | 8"                 | 5050mA         | 0 C - 35 C                   |

| <u>Brand</u>  | <u>Model</u>  | <u>ATEX Zone 1</u> | <u>ATEX Zone 2</u> | <u>IP67</u> | <u>MIL-STD 810H</u> | <u>Comments</u>                     |
|---------------|---------------|--------------------|--------------------|-------------|---------------------|-------------------------------------|
| Apple         | iPad          | No                 | No                 | No          | No                  | Case options available noted below. |
| i.safe MOBILE | IS930.1       | Yes                | No                 | Yes         | Contact Vendor      | ATEX Zone 1                         |
| i.safe MOBILE | IS930.2       | No                 | Yes                | Yes         | Contact Vendor      | ATEX Zone 2                         |
| eCom          | Tab-Ex 03 DZ2 | No                 | Yes                | No          | Yes                 | ATEX Zone 2                         |
| Sonim         | XP8           | No                 | Yes                | Yes         | Yes                 | ATEX Zone 2 EX smart phone tablet.  |
| Samsung       | Tab Active3   | No                 | No                 | No          | Yes                 | Rugged only - no IS/EX              |

## RECOMMENDED ANDROID DEVICES

The following Android devices are recommended by Cumulus for use with mobile app.

### Tab-Ex 03 DZ2

The [Tab-Ex 03 DZ2](#) has the following characteristics:

- OPERATING SYSTEM Android™ 12
- PROCESSOR: Exynos 9810 (Lhotse) Octa-Core 64-Bit; 4 x 2.7 GHz, 4 x 1.7 GHz
- MEMORY RAM: 4 GB, Internal data memory: 64 GB
- DISPLAY: 8" WUXGA, 1920 x 1200 pixels
- ENVIRONMENT TEMPERATURE: -20 °C to +55 °C
- PROTECTION: IP64; MIL-STD-810H
- CONNECTIVITY: Wi-Fi 802.11 a/b/g/n/ac/ax (2.4GHz + 5GHz), 2x2 MIMO
- SIM 1 x Nano SIM
- Bluetooth® v5.0
- Battery: 5050 mAh (Typical); Runtime of up to 11 hours



## iSafe IS930 INTRINSICALLY SAFE Tablet

The [IS 930.1](#) and [IS 930.2](#) are the same tablet except for the EX zone rating and the cost of the devices. The tablets have the following characteristics:

- IS930.1 is the Zone 1 rated version of the tablet.
- IS930.2 is the Zone 2 rated version of the tablet.
- Operating System: Android
- Bluetooth® 5
- Long battery lifetime (8400 mAh)
- LTE & Near Field Communication (NFC) & Wi-Fi IEEE 802.11 b/g/n
- Bright 8" HVGA display & Dust- and waterproof (IP68)
- 13 MP rear camera and 5 MP front camera
- Operating ambient temperature: -20 to 60° C (-4 to 140° F)

IS 930.1



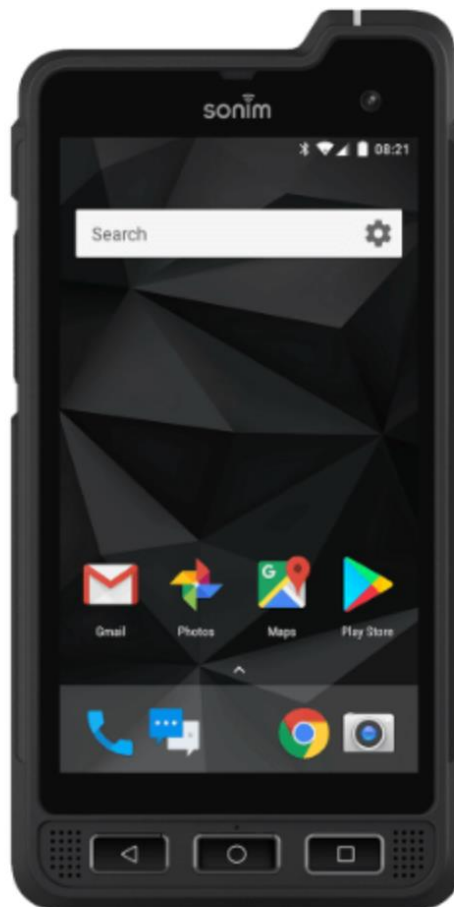
IS 930.2



## Sonim XP8 - IS Smartphone

The [Sonim XP8](#) is an LTE smart phone and the following characteristics:

- Android
- Wi-Fi 802.11 a/b/g/n/ac/r & LTE + NFC
- Bluetooth 5.0 with BLE
- Battery 4900 mAh Li-Ion, Removable
- Rugged Certifications (non-IS)
  - Intrinsically safe Class 1 Div 2, Groups A, B, C, D
  - Class II & III, Div 2, Groups F, G
  - MIL-STD-810G; IP-68 / IP-69
- 5.0" Gorilla Glass 3 Display
- Operating ambient temperature: -20 to 55°C (-4 to 131° F)



## Samsung Tab Active3

The [Samsung Tab Active3](#) is a rugged military-grade design that gives you the confidence you need to take on any job no matter the conditions.

- Android
- Enhanced touch capability for use with gloves and in wet conditions
- MIL-STD 810H Drop Protection
- 4GB RAM, 64GB Storage Internal Memory
- 5,050 mAh Battery Type and Size - Removable
- Weight 426g
- Camera resolution (Front) 5.0 MP
- Camera resolution (Rear) 13.0 MP
- Wi-Fi 802.11 a/b/g/n/ac/ax 2.4G+5GHz, HE80, MIMO, 1024-QAM
- Bluetooth v5.0
- Main Display Resolution 1920 x 1200 @ 8.0" Main Display Size





## RECOMMENDED IOS DEVICES

### Apple iPad mini

The [Apple iPad mini](#) are available in a Wi-Fi or LTE version and the following characteristics:

- 7.9-inch (diagonal) LED-backlit Multi-Touch display (iPad Mini) or 10.2-inch (diagonal) LED-backlit Multi-Touch display with IPS technology (iPad 10.2)
- 8-megapixel camera
- Wi-Fi (802.11 a/b/g/n/ac); simultaneous dual band (2.4GHz and 5GHz) with LTE available
- Bluetooth 5.0 technology
- Built-in 19.1-watt-hour rechargeable lithium-polymer battery
- Operating ambient temperature: 0-35° C (32-95° F)



### Apple iPad Cases

- [OtterBox Defender](#) (Rugged, non-IS rated) available
- [OtterBox Defender Series Division Series 2](#) (IS/EX) available
- Otterbox [handgrip](#) is available
- [XCIEL ATEX Zone 2](#) case
- [Otterbox for Energy](#): Hardline and Defender Division 2 models