Airlink WCP

User and Installation Guide

Document Version 1.2

April 2021

> Warning: Never power on a Airlink WCP without a load on the RF connector.

Table of Contents

1   FCC Compliance

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and

2. This device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by Ondas Networks could void the user's authority to operate the equipment.

2   FCC Exposure Statement

This equipment complies with the FCC RF radiation exposure limits set forth for a controlled environment. This transmitter must follow the specific operating instructions for satisfying RF exposure compliance. This transmitter must be at least 20 centimeters from the user and must not be co-located or operating in conjunction with any other antenna or transmitter.

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

*   Reorient or relocate the receiving antenna.

*   Increase the separation between the equipment and receiver.

*   Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

*   Consult the dealer or an experienced radio/TV technician for help.

The FCC requires the user to be notified that any changes or modifications made to this device that are not expressly approved by Ondas Networks may void the user's authority to operate the equipment.

3 System Overview

The Airlink WCP platform employs Ondas Networks' FullMAX technology.

The Airlink WCP makes up a wayside communications package, including the radio and associated software/hardware that enables the transmission of ATCS datagrams from the WIU to the BCPs and vice-versa. It will function as per the standards that are defined in S-9553.V1.0 & S-9553A.V1.0
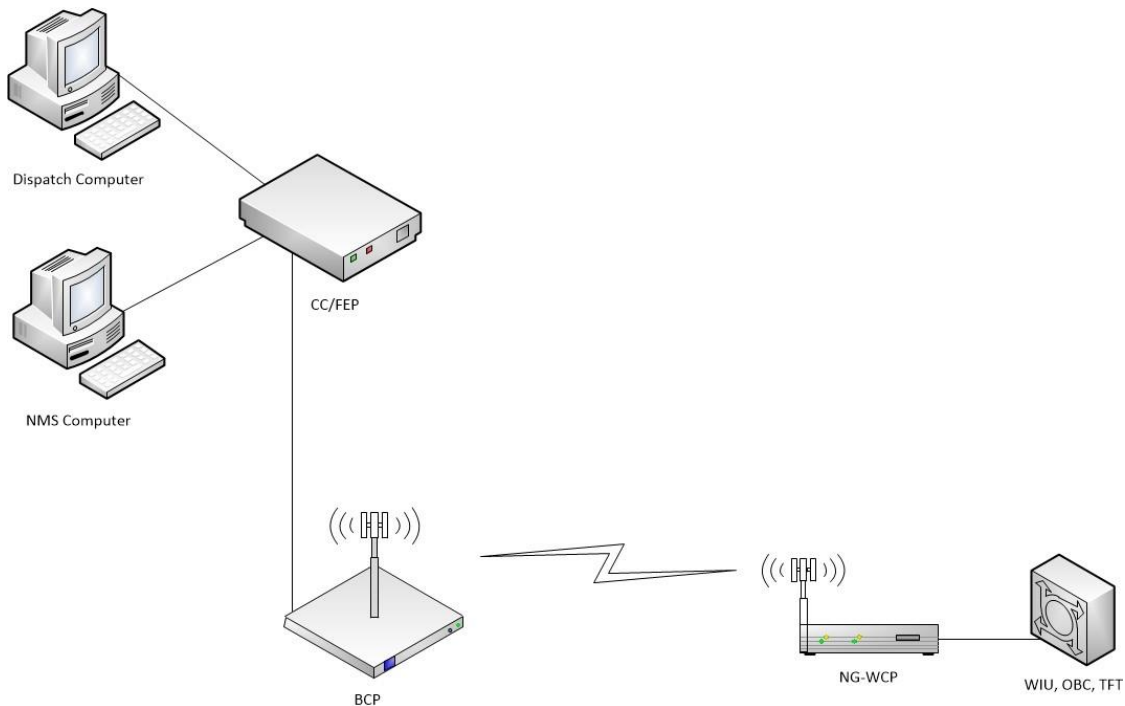

Figure 1 System Overview

Airlink WCPs will interoperate with the existing Siemens BCP infrastructure. It provides a standard interface to the data network for a wide variety of user devices.

Airlink WCP shall be used to perform the following general functions,

- Provide the interface between Base Communication Package (BCP) and Wayside device Interface Unit (WIU)
- Deliver ATCS messages to and receive messages from BCP via an RF link
- Deliver ATCS messages to and receive messages from WIU via the serial ports and a local network interface
- Deliver ATCS messages to and receive messages from a Network Management System in the office.

4   Physical Installation

4.1   Introduction

A Airlink WCP radio is comprised of software and hardware which is packaged in an indoor enclosure intended for mounting in a 19" rack or directly attached to a wall board.

4.2   Airlink WCP Enclosure

4.2.1   Specifications

Enclosure Material	Aluminum Alloy
Dimensions (W x D x H)	9" x 9" x 9" (230mm x 230mm x 255mm)
Operating Temperature	-40° F to 158° F (-40° C to 70° C)
DC Input Power Range	10 to 36 VDC
Power Consumption	No load : 100 watts @ 24 VDC Peak load : 150 watts @ 24 VDC

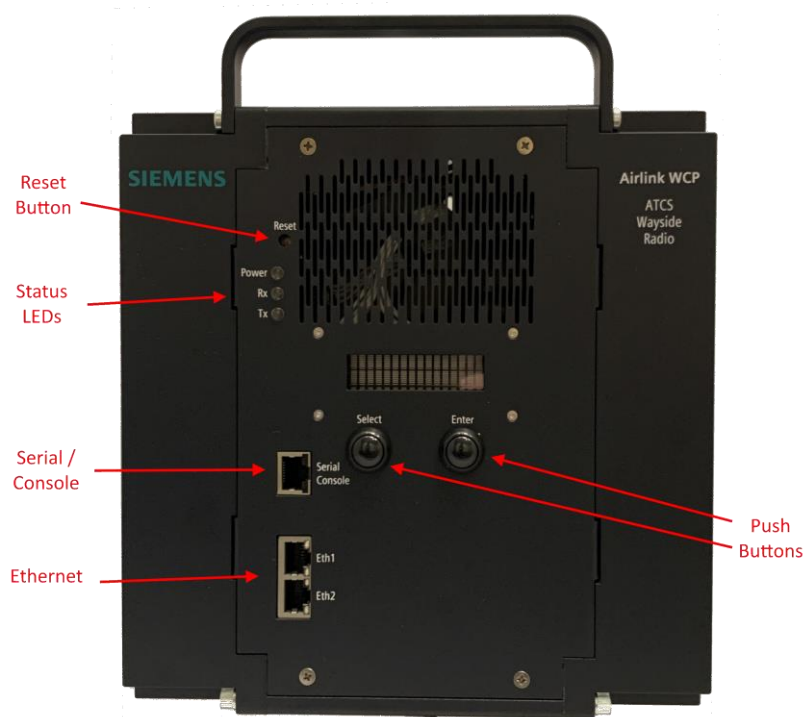### 4.2.2 Product Overview

Figure 2 ; Airlink WCP Overview
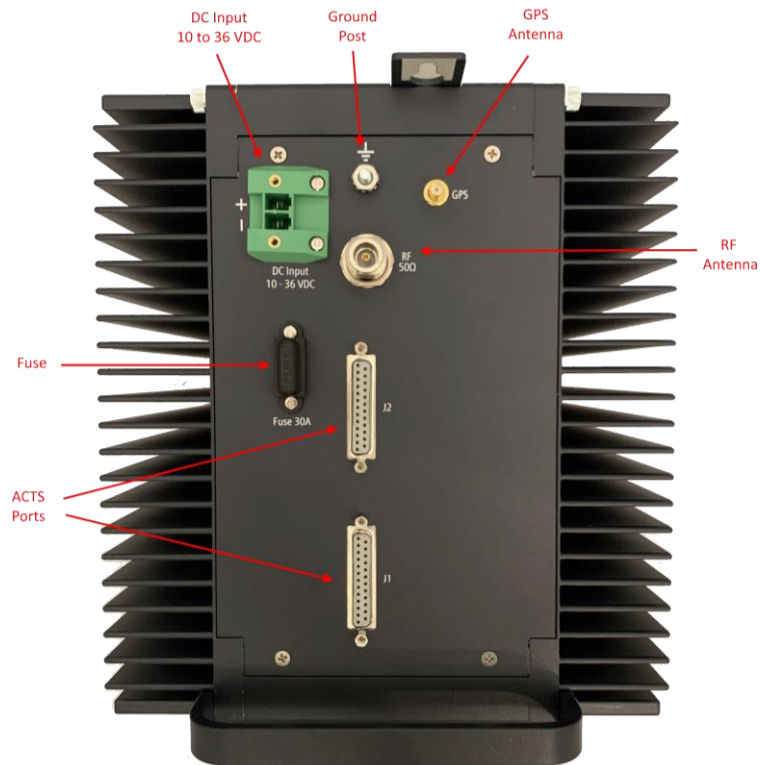
Figure 3 : Airlink WCP Front Panel

Figure 4 : Airlink WCP Top Panel

4.2.3 Connection Descriptions

Connector	Application
GPS Antenna	SMA female connector for optional GPS antenna.
RF Out	50Ω N-Type female connector for RF input from antenna
DC Input	DC power input 10 to 36 volts. Warning: Ensure Correct Polarity
Ground Post	Connection to building ground
Fuse	30 amp Fuse
ATCS Ports	2 x DB25 female connectors for ATCS data
Ethernet	2 x RJ45 connector for Ethernet 10/100 Base-T interface
Console / Serial	RJ45 8-pin connector wired using the Cisco interface specification for serial access and console access via an adapter cable
Reset Button	Recessed access to system reset function
Push Buttons	Select and Enter functions for user interface

4.2.4 Mounting Guidelines

The Airlink WCP can be mounted in a purpose built rack using the teardrop pin mounting cutouts, or attached to a wall board as described below.
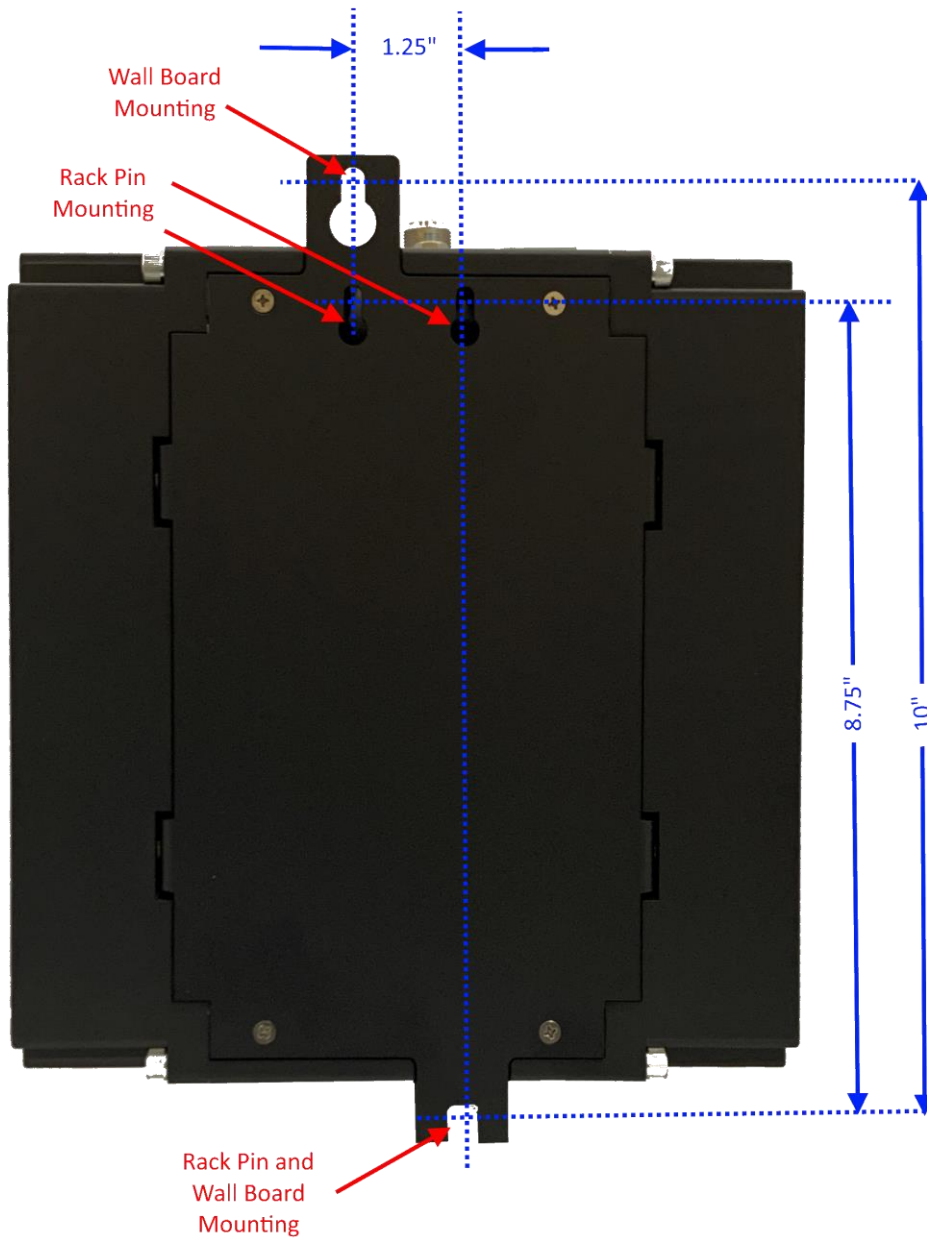

Figure 5 : Airlink WCP Mounting Dimensions

5   System Operation

An Airlink WCP radio automatically starts operation when the DC power is connected. The unit conducts a series of self-tests, the results of which are shown on the front panel display module.

Figure 6 : Pushbuttons and Display

Status information can be accessed using the "Select" and "Enter" pushbuttons to scroll through and select various aspects of the system. The information is shown on the front panel display module.

Basic connectivity with the network can be verified using the Command Line Interface (CLI) via the console connection as shown below…

```
operator@AirlinkWCP-$ show wcp measurement report
show wcp measurement report

-----------MEASUREMENT REPORT ----------------
RSSI                        : -105 (dBm)
Last Packet RSSI            : Not available
SNR                         : 7 (dB)
CBB Rx Gain                 : 25 (dB)
Configured Tx Power         : 45 (dBm)
CBB Temperature             : 29 (C)
RFM Temperature             : 0 (C)
RFM Detected Tx Power       : 0 (dBm)
RFM Detected Current Drawn  : 0 (mA)
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