Distributor Manual - Radios 2.0

Copyright 2011 Jakob Hatteland Computer AS

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Keep for future reference!

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1 About AutoStore Radio Communication

The AutoStore Access Point (ASAP) and the Robot Radio provide wireless connections that enables the AutoStore system to control the Robots. Every AutoStore installation has at least one ASAP and one Robot Radio in every Robot.

ASAP and Robot Radio must only be used with AutoStore modules!

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.

2 AutoStore Access Point

The AutoStore Access Point (ASAP) must be installed in a location above the Grid with free view over the Robots and the whole Grid area. In certain environments, e.g., multi-level installations, installations with obstacles such as walls or columns, or very large Grids, it may be necessary to install additional Access Points to guarantee coverage for the whole Grid.

- recommended 1 ASAP for every 30 Robots
  - not more than 50 Robots per ASAP
  - not fewer than two ASAPs in total
- every ASAP covers a radius of 25 m (in environment without obstacles)
  - not more than 50 m between each ASAP

The Access Point is delivered to the customer in a pre-configured state. All settings match the Robot's settings and cannot be changed by the user..

2.1 Access Point Frequency

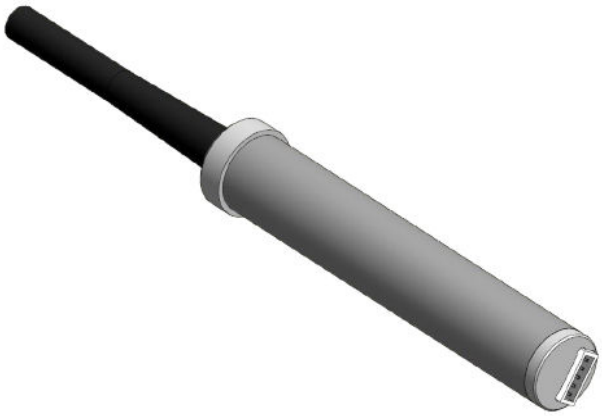
The AutoStore Access Point operates at 915 MHz with multiple frequency channels.

It is recommended that the customer checks the existing traffic on this frequency to avoid interference during operation.

If the 915 MHz range is used by other equipment, it is recommended to contact the distributor.

3 The Robot Radio

The Robot Radio allows the Robot to communicate wirelessly with the ASAP. There is one Robot Radio in each Robot.



The Robot Radio is delivered in a pre-configured state. All settings match the ASAP's settings and cannot be changed by the user.

3.1 Robot Radio Frequency

The Robot Radio operates at 915 MHz with multiple frequency channels.

It is recommended that the customer checks the existing traffic on this frequency to avoid interference during operation.

If the 915 MHz range is used by other equipment, it is recommended to contact the distributor.

4 Troubleshooting Access Point Errors

There are two main indications that point towards an Access Point error:

- the LED on the Access Point blinks red
- the LED on the Access Point shows a steady orange light for a prolonged period of time
- several Robots stop moving on the Grid at the same time

4.1 Checking Ethernet Cable and POE

The Access Point is Powered Over the Ethernet (POE). Make sure that the cable sits securely in both sockets.

If the cable is connected correctly and the Access Point LED is blinking, try pinging the Access Point at it's IP address.

To do this:

- Open a Windows command prompt on the console (Type **cmd** in the search bar of the Windows start menu and press **ENTER**)
- Type **ping** followed by the IP address of the Access Point you want to test
  - If the connection is working correctly it will return "Reply from ..." at the command prompt
  - If the connection is not working you will return "Request timed out" at the command promt

4.2 Replacing the Access Point

If the cabling (Ethernet / POE) has been tested and the LED on the Access Point is still not on, or if it is not possible to ping the Access Point from the Console, then the Access Point has to be replaced.

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