

Document Number: HUB

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1 INTRODUCTION

This User Guide describes the operation and use of the Site Interface Controller, informally referred to as the HUB module. The HUB module is an important component of the LaundryBoss management system.

Revision History

REVISION RECORD			
Revision	Date	Originator	Revision Description
001	05/19/2016	VP O&E	
002	11/30/2017	TNBI O&E	
003	01/11/2018	TNBI O&E	

2 Product Description

The purpose of the Site Interface Controller (HUB) is to wirelessly relay management messages received from the LaundryBoss Cloud Server to the local "Machine Interface Board" (MIB) units that are located in the various devices to be managed at a customer site. The HUB is typically connected via its Ethernet port to an external WAN Internet router supplied by the customer. Using this customer supplied Internet connection, the HUB functions as a secure bidirectional communications gateway between the LaundryBoss Cloud Servers and the local MIBs that are installed in each of the machines to be managed at a typical site. A short range unlicensed "915 mhz" RF link is used at each site to communicate between the HUB product and the local MIBs, see figure 1 below.

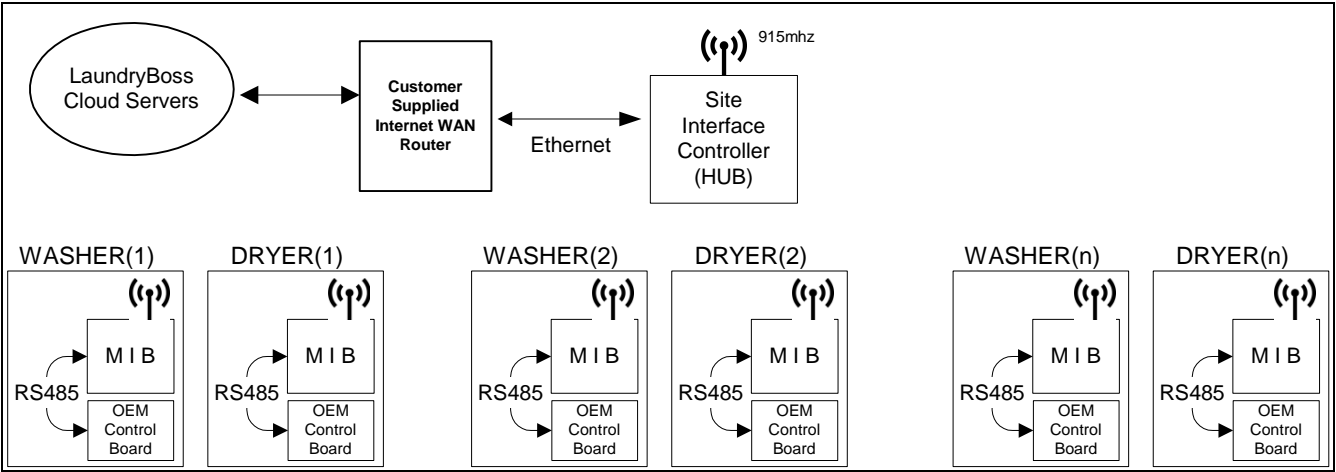


Figure 1 HUB Board (HUB) and MIB system overview

3 Product Architecture

3.1 Hardware Architecture

The Site Interface Controller (HUB module) has a dual-processor architecture. One processor is connected to the External Ethernet ports and handles the Internet communication tasks, and the other processor is dedicated to the operation of the local 915mhz RF link providing access to the site MIBs, see figure 2 below.

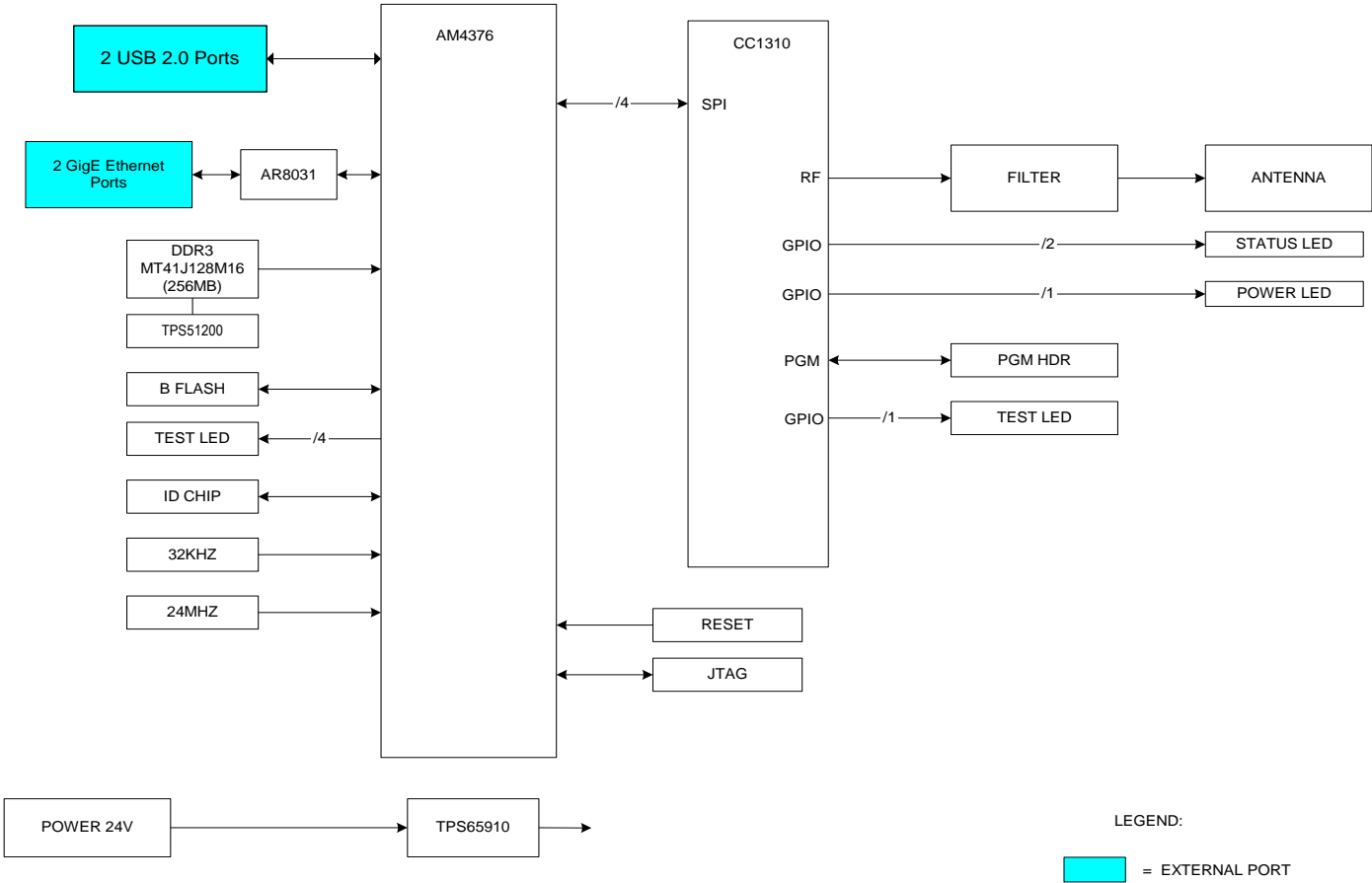


Figure 2 – Site Interface Controller Hardware Architecture Diagram

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3.1.1 External Interfaces

3.1.1.1 Power Interface

1. 12 Volt DC Input Power

3.1.1.2 Communication Interfaces

1. 2 Gigabit Ethernet ports
2. 915mhz bidirectional RF Link

3.1.1.3 Storage Interfaces

1. 2 USB Ports. Each USB port is capable of supplying 500mA of current at 5VDC.

3.2 Software Operation

The Hub board does not require any direct user interaction. Upon power up, its operating software will establish a connection with the the LaundryBoss Cloud Servers using the customer supplied Internet connection. The LaundryBoss Cloud Servers will interact with the customer and send commands via the Internet to the HUB for forwarding to the MIBs at the site.

4 Power Consumption

Hub Board (both 1G Ethernets connected, memory test running) = 12V / 420mA
 Add USB1 5V/ 500mA = 12V/ 245mA (85% efficiency)
 Add USB2 5V/ 500mA = 12V/ 245mA (85% efficiency)

Total Power = 12V DC / 910mA minimum.

The recommended external power supply is 12V DC / 2 Amp.

4 Installation

No special considerations are required for the average installation. The HUB can be mounted in any orientation at a convenient location providing access to the MIBs.

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.

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B 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.

To maintain compliance with FCC's RF Exposure guidelines, This equipment should be installed and operated with minimum distance between 20cm the radiator your body: Use only the supplied antenna.

FCC ID: 2AL5K-HUB216300