

AiBO+ WLAN Setup Guide

Version 3.1 – Let's Play!

(Last update: 08/08/2015)

Introduction

The purpose of this document to help people to set up their wireless network for AIBO at home balancing between security and convenience.

I recommend to look into the “Making network settings” in AIBO Wireless LAN Card document. Although it is for the WLAN card of ERS-2x0 models, but it gives a better technical insight of the WLAN configuration details:

<https://www.dropbox.com/s/6euwn8v3dlb9tft/ERA201D1.pdf?dl=0>

You can find the some basics about the wireless settings in the official Sony's "User's Guide (PC Network) for ERS-7":

https://www.dropbox.com/s/b0fmb4c9c3vc992/NETWORK_E_ACC1100111.pdf?dl=0

...and the settings on the PMS stick can be changed also with MemoryStick Settings of AiBO+, see in the AiBO+ User Guide:

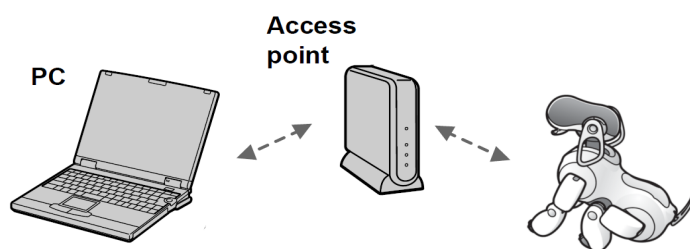
http://aiboplus.sf.net/docs/aiboplus_user_guide.pdf

General Considerations

The WiFi card in Sony ERS-7 does not support the modern WPA/WPA2 encryptions, only 64/128 bit WEP. Unfortunately, some recent wireless routers do not support WEP encryptions anymore and people do not want to set their wireless network unsecured without a password because of AIBO.

There are alternative scenarios which balances between the safety and convenience. Usually, people have their internet connections at home and a wireless network with WPA/WPA2 encryption. The idea is to configure a separate wireless network with 128 bit WEP encryption for your robot with different possible topologies.

Case 1: Separated wireless network

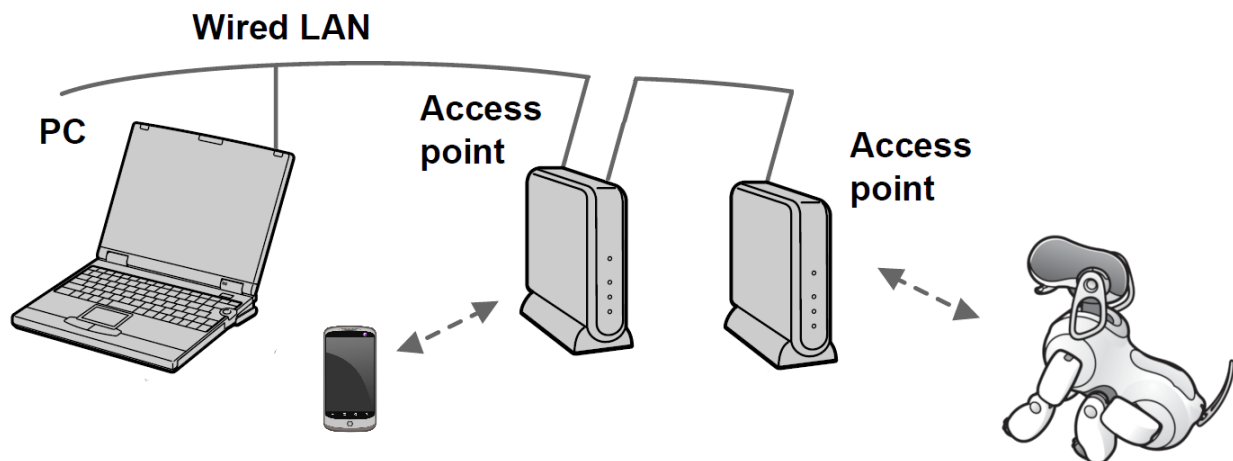


This is the easiest solution, an isolated wireless network without access to the internet. Just install a WEP enabled wireless router or access point without connecting to the wired network and the

internet. Setup the router with WEP encryption, connect your ERS-7 and your laptop or other devices to this WLAN. When you use an AiBO+ Client and your ERS-7, they are on an isolated WLAN network. The AiBO+ Client preserves any collected data and after reconnecting your laptop or Android device to a WLAN with internet access later, this application will send the pending uploads to the AiBO+ Cloud.

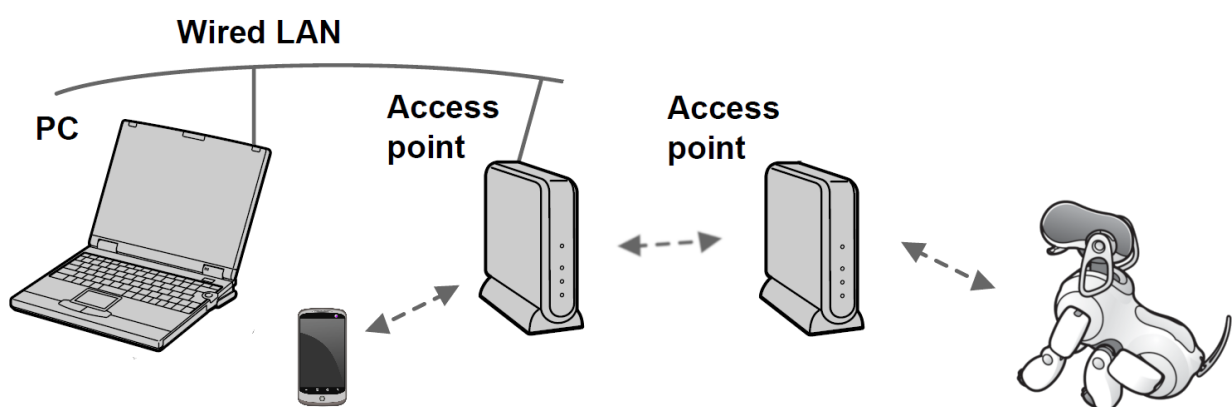
The DHCP server can be switched on in the WLAN router, but the laptop/portable device must be reconnected to the wireless network for AIBO all the time when you want to connect to the robot. This practice can be quite inconvenient if you want to browse or use services from the internet.

Case 2: Wireless network for AIBO connected with wired network



A router is configured for AIBO with 128 WEP key and it is connected to the main, secure WLAN router with a network cable. The wireless network for AIBO has weak encryption, but the wireless traffic is minimal on this vulnerable network. The laptop and other portable devices can access the internet and AIBO through the network cable although they are not connected to the wireless for AIBO directly.

Case 3: Wireless network for AIBO bridged with a secure WLAN network



There is a technology called wireless distribution system (WDS) to bridge two wireless networks. This option can be configured on the web administration interface of the routers, but the vendors have different implementations and restrictions: for example two WLAN networks must have the same name or the same encryption method. The newer products are less restrictive and I found a solution which is the best and most flexible option with AIBO in my opinion though it needs WLAN routers which support WDS between a WPA/WPA2 and a WEP network. I found that at

least TP-Link products work very well in this scenario (feel free to share other success stories with me):

- My main router is a TP-Link WR1043ND, but I think any WLAN router from TP-Link should work in the same way. This router is configured with WPA2 encryption and the network name (ESSID) is HomeNet. My laptops and Android devices connect to this secure network to access the internet.
- I have a small nano router (TP-Link WR702N), other similar TP-Link products should work the same way, e.g WR703N or WR710N. (These can be ordered from amazon, ebay or aliexpress for cheap.) This router is configured with 128 bit WEP encryption with ESSID name HomeNetAIBO. Since this router is very small and it can be powered with a simple microUSB cable thus extremely portable.
- Both routers have been configured to bridge with WDS to each other, my AIBO has static IP address set on the PMS stick to avoid problems with the DHCP server of the home network. The DHCP server in the nano router (WR702N) is switched off.
- When I need to connect AIBO to WLAN, I just connect the nano router (WR702N) in a USB port, it is started in a few seconds and connects to my main wireless network with WDS. Finally, my robot can be switched on and started to use. While my portable devices are connected to HomeNet, they can still reach my AIBO on HomeNetAIBO network. When I finish the work with AIBO, I can disconnect the nano router from the USB port.

Support

Feel free to contact me for advice to set up your WLAN network for AIBO with any questions: csaba.kertesz@gmail.com