Anybus Wireless Bolt as Access Point

To the eWON LAN Network

SOLUTION SHEET

KB-0282-00 EN 1.0 ENGLISH

Connecting Devices™

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1 Preface

1.1 About This Document

This document details the configuration of an Anybus Bolt device as a Wi-Fi access point on the LAN side of your eWON device.

This document concerns the eWON Cosy 131 and eWON Flexy only.

For additional related documentation and file downloads, please visit www.ewon.biz/support.

1.2 Document History

Version	Date	Description
1.0	2018-09-06	First release

1.3 Related Documents

Document	Author	Document ID
comcfg.txt	HMS	KB-0050-00

1.4 Trademark Information

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2 Introduction

As of firmware version 13.1s0, the eWON device can be combined with an AWB (Anybus Wireless Bridge/Bolt). This AWB device will then acts as a Wi-Fi access point on the LAN network of the eWON.

The following AWB device can be used to perform the combination:

- Anybus Wireless Bolt, running firmware 1.3.9 or higher.
- Anybus Wireless Bridge, running firmware 1.3.9 or higher

The aim of the combination between the eWON and the AWB is to allow a wireless connection to the LAN devices plugged in the eWON, regardless of the protocol (broadcast, unicast, HTTP, TCP, ...).

2.1 Network Infrastructure

A typical use of the eWON with a AWBwould be the following one:

- Connected to the LAN side of the eWON:
  - An AWB
  - An Ethernet device: a PLC, an HMI, ...
- Connected on the WAN side of the eWON: a cable allowing Internet connection (company network).
- Devices (computers, mobiles, ...) are connected to the AWB through Wi-Fi. These devices automatically receive an IP address from the AWB DHCP server.

Based on this structure, the computers/mobiles can reach the eWON, the PLC/HMI or any other LAN devices connected to the LAN side of the eWON.

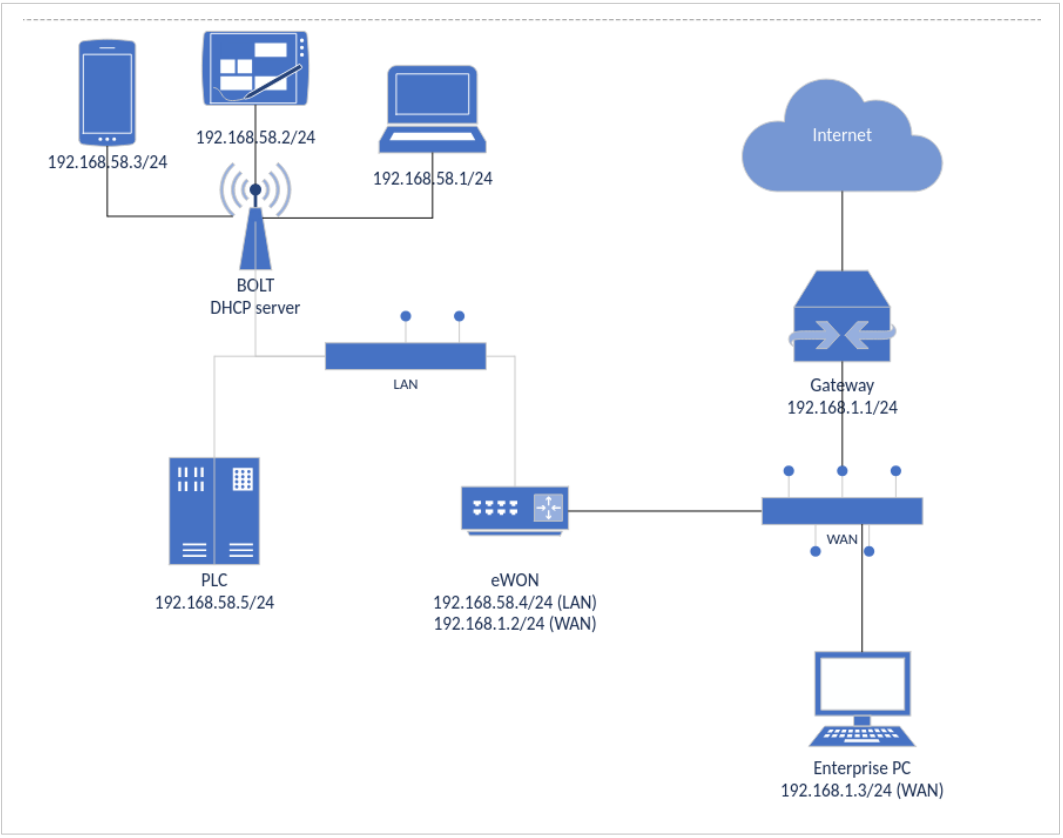

Fig. 1 Typical Use of the eWON combined with a AWB

3 Configuration

To configure the AWB, go to: **Setup** > **System** > **Main** > **Accessories**.

The configuration of the AWB is possible only if an AWB is detected by the eWON.

If you don't see your AWB, check the wiring of your AWB (Ethernet on the eWON LAN side, the power, ...) and thenclick on "Scan LAN for Bolt/AWB devices" button.

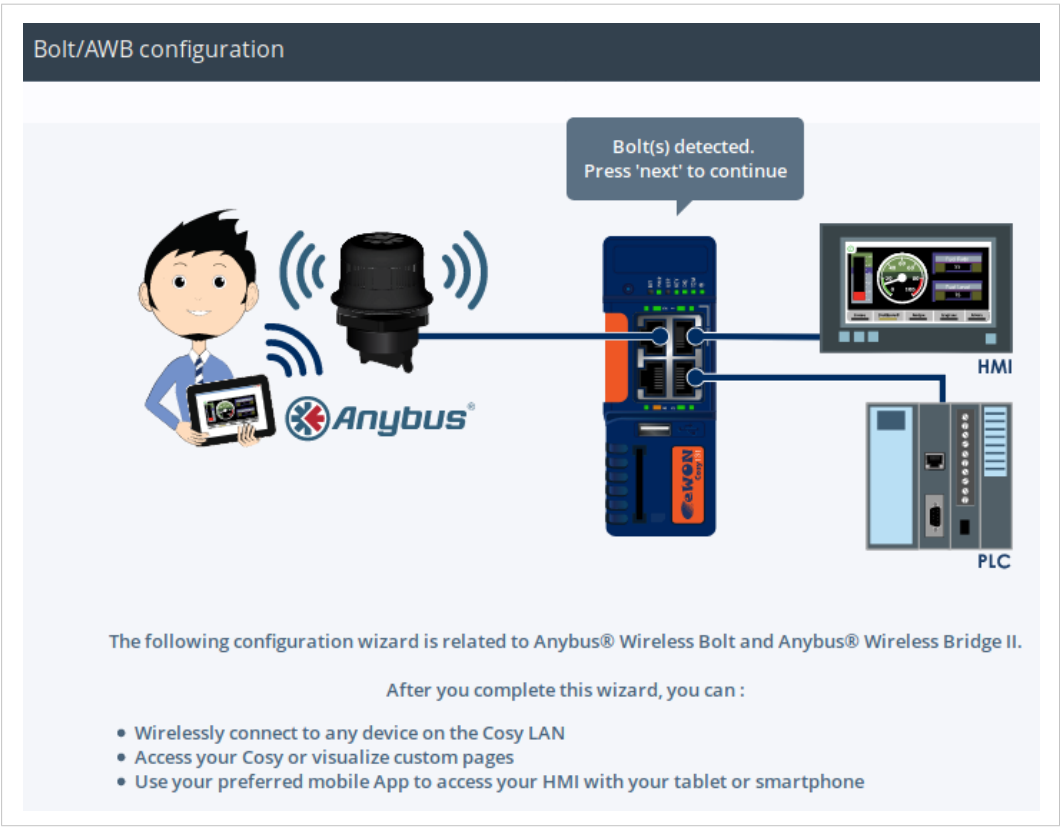

Fig. 2 AWB Configuration Interface

3.1 Simplified View

By default, the simplified view is displayed when configuring the AWB, where only 4 options needs to be set:

Bolt/AWB detection

Control	Description
Scan LAN for Bolt/AWB devices	By clicking the "Scan LAN for Bolt/AWB devices" button, the eWON scans its LAN ports to detect any AWB devices.

Bolt/AWB generic configuration

Control	Description
Enable Bolt/AWB configuration	If enabled, the configuration panel of the AWB will appear.
SSID	The name of the Wi-Fi network that will be broadcasted to access the eWON and its LAN devices.
Password	This fields sets the password to protect the Wi-Fi network.

Other parameters are also needed but because it is the simplified view, they are hidden and auto-set. To see the whole list of parameters, check *Detailed View, p. 7*.

The hidden & auto-set parameters of the simplified view are :

- **Security**: is set to “WPA/WPA2 PSK”.
- **DHCP server**: is set to “DHCP server on Bolt”.
- **Bolt LAN IP**: is set automatically (auto IP address).
- **Hostname**: is named based on the following pattern: [SSID][Incremented Number].

The “auto IP address” set for the “Bolt LAN IP” is generated based on the following method:

1. There is a check of the LAN IP address of the eWON. E.g.: 10.2.0.155 (255.255.0.0)
2. There is a ARP scan of the network range. E.g.: [10.2.0.0 -> 10.2.0.255]
3. Based on the ARP scan, the DHCP server provides IP addresses that were not responding (and so were not used).

3.2 Detailed View

To display the detailed view of the AWB configuration interface, different methods exist:

- Configure more than one AWB
- Set one of the AWB parameters (from the tabular edition) to a non-default value. Check the *Simplified View, p. 6* for the hidden & auto-set parameters which represent the default values.

To change an AWB parameter’s value through the tabular edition, go to: Setup > System > Storage > Tabular edition >edit COM cfg. Check Related Documents, p. 3 for parameters definition of the comcfg.txt

Once the detailed view displayed, the following parameters can be set:

Bolt/AWB detection

Control	Description
Scan LAN for Bolt/AWB devices	By clicking the “Scan LAN for Bolt/AWB devices” button, the eWON scans its LAN ports to detect any AWB devices.

Bolt/AWB generic configuration

Control	Description
Enable Bolt/AWB configuration	If enabled, the configuration panel of the AWB will appear.
SSID	The name of the Wi-Fi network that will be broadcasted to access the eWON and its LAN devices.
Security	The security level applied to the eWON: • None • WPA/WPA2 PSK
Password	If “Security” field is different than *None*, this fields sets the password to protect the Wi-Fi network.
DHCP Server	This sets if a DHCP server should exist and which device should it be: • DHCP server on Bolt: the AWB device is used as DHCP server. • DHCP server on this device: the eWON is used as DHCP server. • None: there is no DHCP server.

Bolt/AWB generic configuration (continued)

Control	Description
	Check *DHCP Server, p. 9*.
DHCP start IP	The DHCP server can distribute IP addresses starting from the one indicated in this field. This field is available if “DHCP Server” is different than *None*.
DHCP end IP	The DHCP server can distribute IP addresses until the one indicated in this field This field is available if “DHCP Server” is different than *None*.
Check DHCP IP range	By clicking this button, the eWON checks if the IP range determined by “DHCP start IP” and “DHCP end IP” is available.

The following table appears only if multiple Bolts are detected.

Bolt/AWB specific configuration

Control	Description
Hostname	Give the AWB a symbolic name.
Bolt LAN IP	Give the AWB device an IP address.
Check LAN IP	Checks if the IP address if valid and available.

All these parameters are also available in the “comcfg.txt”, check the *Related Documents, p. 3*.

3.3 Limitations

The eWON can auto-discover up to 10 AWBs but a maximum of 3 of them can be configured.

Multiple AWBs can be useful if:

- your Wi-Fi coverage is not good/stable enough,
- more than 7 clients must connected to a single access point.

4 Advanced Setup

4.1 Internet Access

The following configuration will allow all devices connected to the Wi-Fi (generated by the AWB) to receive an Internet connection as well as a LAN access.

> **!** By doing so, the “plug & route” feature will cease to work. All the LAN devices connected to the eWON must then have the IP address of the eWON as gateway.

The process to give this Internet access is as follows:

1. From the Bolt/AWB configuration panel, in the DHCP setup block, select the “DHCP server on this device” option.
2. Go to the tabular edition of the eWON’s comcfg.txt (System > Storage > Edit COM cfg) and set the following parameters:

NatItf	2
VPNRedirect	0
FwrdToWAN	1
DNSRenabled	1

4.2 DHCP Server

The DHCP server is a nice feature to automatically deliver IP addresses to clients connected to the Wi-Fi of the AWB.

The AWB configuration offers 3 possibilities:

- **DHCP server on Bolt/AWB**

  The default selection and the most common choice.

  It allows the Wi-Fi access point to broadcast even if the eWON reboots or faces issues.

  However, you will have a DHCP server on your LAN side which is limited to 7 devices.

- **DHCP server on this device**

  This option should be selected if:

  – an Internet access is required

  – there is a need to support more than 7 devices

  – the DHCP server must be used by any of the LAN device (including the AWB).

  However, you will have a DHCP server on your LAN side and if the eWON reboots or faces issues, reconnection to the Wi-Fi might be impossible.

- **None**

  This option should be chosen if you already have a DHCP server on your LAN (other than a AWB or an eWON) and this server provides IPs that are compatible with your eWON LAN side.

4.3 Custom AWB Commands

4.3.1 Discovery

If you want to discover the AWB's manually, a webform through M2Web can be used:

```
https://m2web.talk2m.com/[ACCOUNT NAME]/[EWON NAME]/
rcgi.bin/DiscoverBolts?Scan=true
```

This supposes you are already logged in to your M2Web account. The credentials of your eWON device will be asked.

The format of the answer is based on JSON:

```
{"result":true,"macs":["00:30:11:1c:dd:92"],"ips":["10.2.0.8"],
"hostnames":["bolt"]}
```

Where:

result	Boolean representing the success/error of the query.
macs	An ordered array of MAC addresses (string format).
ips	An ordered array of corresponding IPs.
hostnames	An ordered array of corresponding hostnames.

4.3.2 AT Commands

If you want to send a specific command to a specific AWB using its MAC, a webform through M2Web can be used:

```
https://m2web.talk2m.com/[ACCOUNT NAME]/[EWON NAME]/
rcgi.bin/BOLTCmd?cmd=AT*ANHN&destmac=FF:FF:FF:FF:FF:FF
```

This supposes you are already logged in to your M2Web account. The credentials of your eWON device will be asked.

This is an advanced feature for which the eWON is just acting as a relay to your command. It is totally separated from the features described in this document. If you encounter any problem with AT commands, reboot your eWON to ensure your AWB is correctly set up.

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