



THE ENERGY OF THINGS

AMBR
AMATIS Border Router



User Manual

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1.0 INTRODUCTION

Thank you for choosing Amatis Controls. This **AMBR User Manual** will guide you through the process of installing and using the Amatis Border Router (AMBR). AMBR allows your system to report valuable energy data to your Energy Dashboard, which is accessible online. All components must be installed correctly to ensure the overall accuracy of this kit.

1.1 BEFORE YOU START

Before beginning installation, make sure the installation site has:

- a. High speed Internet connection (configured for DHCP)
- b. Ethernet and electric outlets, within 200 feet of AMBR.

Please note AMBR can also be configured to use a static IP address.

1.2 NETWORK FIREWALL REQUIREMENTS

TCP 1195 outbound to vpn.amatiscontrols.com

UDP 1195 outbound to vpn.amatiscontrols.com

TCP 3306 outbound to sql.amatiscontrols.com

TCP 80 outbound to checkip.dyndns.org

TCP 80 outbound to vpn.amatiscontrols.com

TCP 80 outbound to api.amatiscontrols.com

TCP 80 outbound to dash.amatiscontrols.com

2.0 INSTALLING AMBR

AMBR connects your Amatis system to the Internet. Follow the steps below:

1. Connect one end of the blue Cat5/Ethernet wire to the back of AMBR.
2. Connect the other end of the blue Cat5/Ethernet wire to an available Ethernet port.

NOTE: Some cable & DSL modems have only one Ethernet port. In order to connect AMBR you may need to add another Ethernet port. Ethernet Switches are available to add more Ethernet ports to the same Internet connection. One option is illustrated below:



3. Plug the barrel end of the white 5V power supply into the back of AMBR, then the plug into the wall socket.

4. Wait for 1-2 minutes while AMBR completes its **startup sequence** and connects to the Internet. The **startup LED sequence** is as follows:
 - a. red led, power GOOD
 - b. white led, AMBR started
 - c. blue led, hardware GOOD
 - d. yellow led, networking possible
 - e. green led blinking, loading software
5. On the front of AMBR a **solid green light** confirm AMBR has booted up correctly and is connected to the Internet. **Startup sequence** is complete, refer to section 2.2 for descriptions of regular LED functions.
6. If AMBR does not show a blue light after 5 minutes, you may be experiencing an Internet connectivity problem. Follow the troubleshooting steps in the next section.

2.1 TROUBLESHOOTING AMBR CONNECTIVITY

1. Restart your modem and AMBR.
 - a. Power both devices off
 - b. Power modem on
 - c. After modem reboots and shows Internet activity
 - d. Plug AMBR back in
 - e. Verify AMBR shows blue blinking light
2. Confirm your modem is configured in DHCP mode
 - a. Follow modem owner's manual directions
 - b. Contact your Internet service provider
3. Identify which AMBR indicator lights are active.

NOTE: When AMBR is connected to power, all lights turn on, then turn off, then turn back on one-by-one. Indicators can be diagnosed in the table below:

2.2 AMBR INDICATOR LEDS

LED	Flashing	Solid	Off
Green	Processor boot-up SUCCESS	Processor boot-up SUCCESS	Processor ERROR
Orange		Off Line data logging SUCCESS	Off line logging ERROR
Blue	Data logging and configuration enabled SUCCESS	Data logging enabled SUCCESS	Internet connection ERROR
White			Normal operation
Red		Power connection SUCCESS	Power connection ERROR

NOTE: this table is only valid after AMBR has completed it's **startup sequence** and the green LED is solid.

3.0 AGENCY CERTIFICATIONS

Operating Requirements and Conditions

The design of AMBR complies with FCC and IC safety levels of radio frequency (RF) exposure for Mobile devices.

Mobile Device RF Exposure Statement

RF Exposure - This device is only authorized for use in a mobile application. At least 20 cm of separation distance between the AMBR device and the user's body must be maintained at all times.

Caution Statement for Modifications

CAUTION: Any changes or modifications not expressly approved by *Amatis Controls, LLC* could void the user's authority to operate the equipment.

FCC Notices

AMBR 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 an 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 AMBR off and on the user is encouraged to try to correct the interference by one or more of the following measures:

- 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 for help.

OEM Labeling Requirements

WARNING! The Original Equipment Manufacturer (OEM) must ensure that FCC/IC labeling requirements are met. This includes a clearly visible label on the outside of the final product enclosure that displays the contents shown below.

FCC:

Contains FCC ID: 2ADDY-BR1

The enclosed 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

IC:

Contains Model AMBR, IC:20256-BR1

This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions:

1. this device may not cause interference, and
2. this device must accept any interference, including interference that may cause undesired operation of the device

Exigences et conditions de fonctionnement:

La conception de AMBR est conforme aux limites d'exposition aux Fréquences Radio définies par les normes IC et FCC pour les appareils mobiles.

Déclaration d'exposition aux fréquences radio d'appareil mobile

Exposition fréquences radio - Cet appareil est seulement conçu pour usage mobile. Au moins 20 cm de séparation doit être maintenue à tout instant entre l'appareil AMBR et l'utilisateur.

Déclaration de mise en garde concernant les modifications

ATTENTION: Tous changements ou modifications qui ne sont pas expressément approuvés par *Amatis Controls, LLC* sont susceptibles de révoquer les droits d'utilisation de cet équipement.

Avis IC

AMBR a été testé et entre dans la catégorie des appareils numériques de Classe B, selon la Section 15 de la réglementation de la IC. Ces limites ont été conçues pour protéger les installations domestiques contre les interférences néfastes. Cet équipement génère, utilise et émet de l'énergie sous forme de fréquences radio et, en cas de non-respect des instructions d'installation et d'utilisation, risque de provoquer des interférences radio. Il n'existe cependant aucune garantie contre ces interférences.

En cas d'interférences radio ou télévisuelles, pouvant être vérifiées en allumant, puis en éteignant l'équipement, l'utilisateur est invité à essayer de résoudre le problème de l'une des façons suivantes :

- Eloigner l'équipement du poste de réception ;
- Brancher l'équipement sur une prise appartenant à un circuit différent de celui du récepteur ;
- Demander de l'aide auprès du revendeur ou d'un technicien radio/TV

Exigences en matière d'étiquetage OEM :

ATTENTION! Le fabricant d'équipement d'origine (OEM) doit veiller à ce que les exigences en matière d'étiquetage de la FCC / IC soient respectées.

Cela comprend une étiquette clairement visible sur l'extérieur de l'enceinte du produit final qui affiche le contenu ci-dessous.

IC:

Contient le model AMBR, IC:20256-BR1

Cet appareil respecte le(s) standard(s) RSS de l'Industry Canada sans license. Pour cela le sujet doit respecter les deux conditions suivantes:

1. cet appareil ne doit pas causer des interférences, et
2. cet appareil doit supporter toute interférence, incluant des interférences pouvant déclencher des fonctionnements indésirables de l'appareil

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