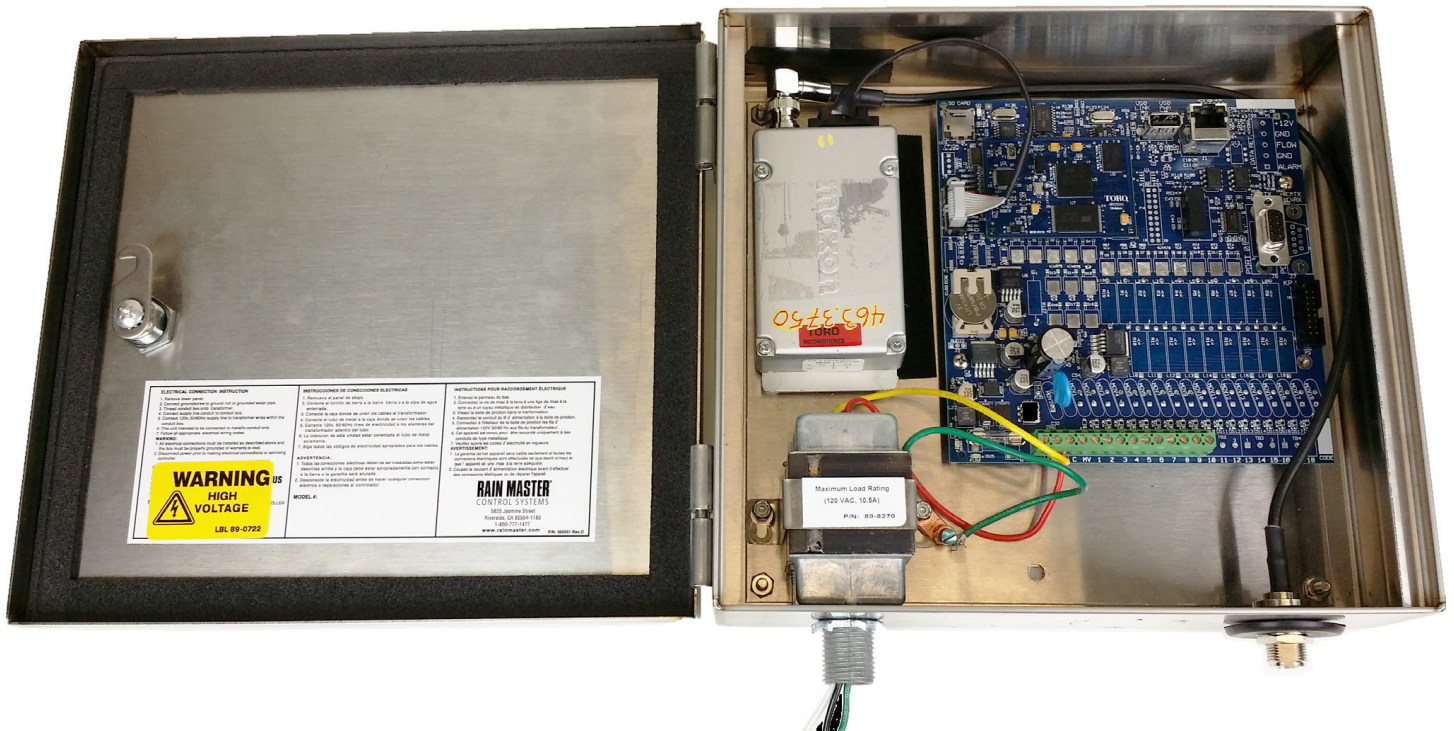# DX2 Ethernet-to-Radio Repeater
(SKU: DX-ETHER-RF-RPTR)
User Guide

RAIN MASTER®
CONTROL SYSTEMS

Tools You May Need:

- hardware (wall anchors, screws, etc.) for mounting enclosre to wall
- tools as needed for wall mounting hardware (drill, screwdriver, pliers, tape...)
- optional conduit and electrical wire hardware (as needed)
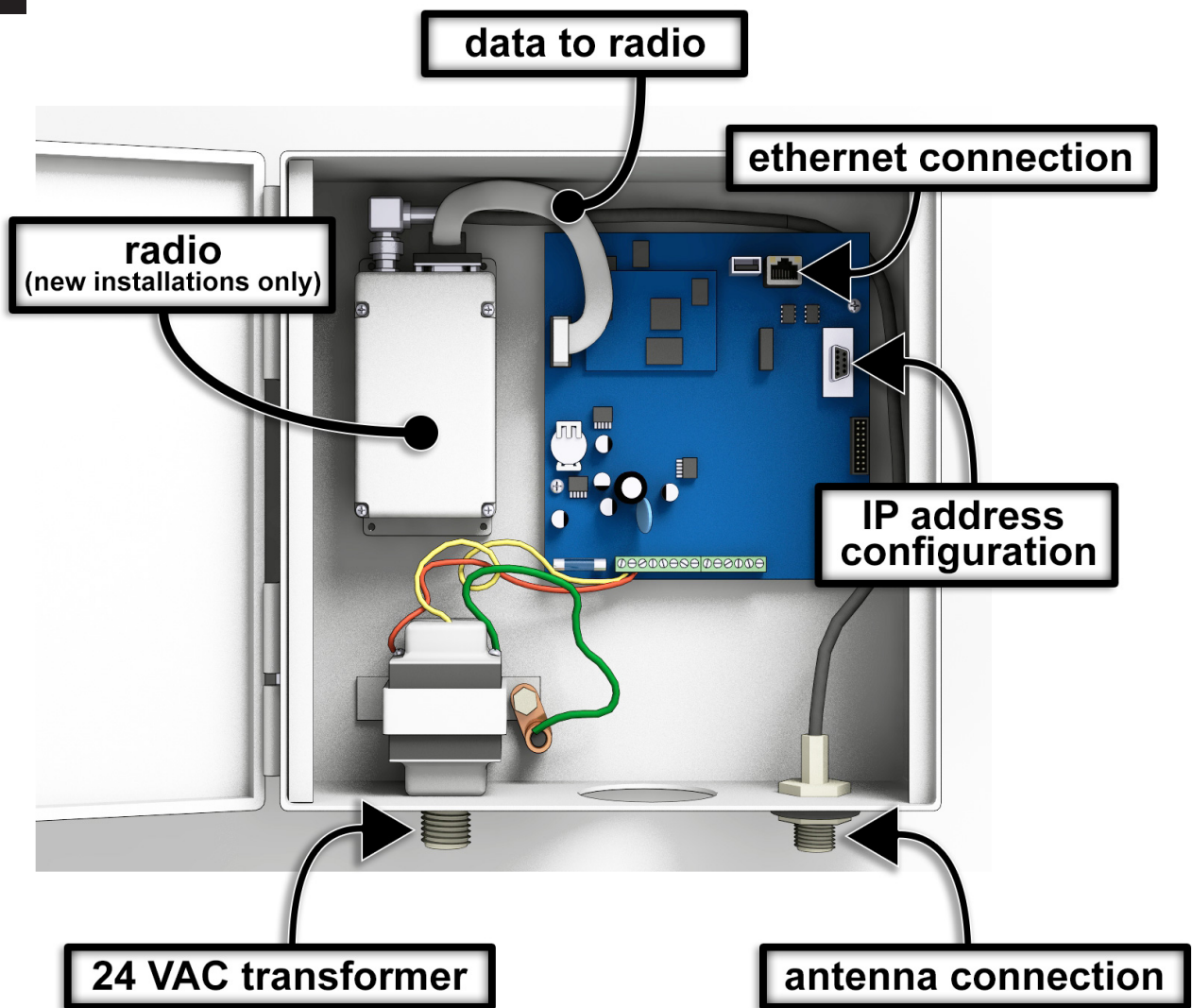
Opening the Controller

⚠ Before working on unit, verify that the AC power to the unit has been turned off.

Steps:
1. Run conduit (½" recommended) between the enclosure and the power source
2. Remove the screw that secures the cover on the wiring compartment (see page 1) then remove the cover.

Package Contents

1. DX2 Ethernet-to-Radio Repeater, main board ("E2R")
1.1. (4 qty) main board mounting screws
2. Radio Data Cable
3. Radio Antenna Coaxial Cable
4. 24VAC Transformer
4.1. Transformer Retainer Bracket
4.2. (2 qty) Retainer Bracket Nuts
5. Stainless Steel Wall--mounting Cabinet
5.1. (4 qty) cabinet mounting screws
5.2. (2 qty) cabinet keys
6. DX2 Ethernet-to-Radio Repeater Faceplate
6.1. (2 qty) faceplate screws

Figure 1

data to radio

ethernet connection

radio
(new installations only)

IP address configuration

24 VAC transformer

antenna connection

Installation

1. Secure cabinet to wall using included mounting hardware.
2. Attach antenna cable to coaxial jack protruding from bottom of cabinet.
3. After removing Faceplate, feed Ethernet cable into cabinet from bottom of cabinet. Plug Ethernet cable into port J1, labeled "ETHERNET" (see **Figure 1**).
4. Install power cables to the unit.

⚠ **WARNING!** This step should be completed by a qualified professional familiar with the dangers involved. The connections from the main line power to the transformer's leads should be done in a junction box affixed to the bottom of the cabinet. This reduces the risk of electrical shock and injury. The circuit powering the unit should have power removed during the installation to reduce risk of electrical shock. Use a circuit tester to ensure that the power is OFF to these lines before installing the main line power to the transformer.

5. Power on the unit. The unit indicates that it has completed the boot process once the red "CPU" LED is flashing. This LED is located in the lower left corner of the board.
6. Replace Faceplate if IP settings have already been completed. See Setup procedures below.

Setup

The DX2 Ethernet-to-Radio Repeater functions as an Ethernet-based extender to the radio features implemented in the Oasis central control software. The Oasis software will send a command via Ethernet to the specific IP address of the Ethernet/Radio Repeater. The Ethernet/Radio Repeater will then transmit this command through the UHF radio to one or more DX2-radio pairs in the field. The responses from the DX2s in the field will be received by the Ethernet/Radio Repeater and sent along to Oasis via Ethernet. The Ethernet/Radio Repeater has a few settings that must be configured in order for proper operation. These settings can be configured through the Serial port (labeled "Port 0") on the main board. Once a computer is physically connected to this Serial port and the unit is powered on, use a terminal application with the following settings to establish a connection:

> Baud rate = 19200 baud
> Data bits = 8 bits
> Stop bits = 1 bit
> Hardware Flow Control = None

Once a Serial connection is established, the unit will respond to commands sent through the terminal application. Most of the commands will require a Unit Code prefix that is unique to each unit. Commands of this type are considered "secure". This means that if the Unit Code of a unit is 1234, all of the commands sent to it must be prefixed with the four-digit Unit Code. Use leading zeroes to make sure the prefixed Unit Code is four digits long. ("0004" for a Unit Code of 4.) There are two "non--secure" commands that do not require a unit code. All commands are processed by the unit when <Enter> is pressed. Commands are not case sensitive.

Non-secure commands:

AT	Ping the unit. This command will return the current firmware version.
UC	Unit Code. This command will return the Unit Code of the unit. Use this Unit Code prefixed to the "secure" commands below.

Secure commands:
(Secure commands must be prefixed by ####, the four-digit Unit Code obtained from the "UC" command.)

SUC <new unit code>	Change the Unit Code. Range: 001 to 999.
IP?	Returns the current IP settings for the unit.
SETIP A.B.C.D	Set the IP address to "A.B.C.D". Use "0.0.0.0" for DHCP.
SETNM A.B.C.D	Set the Netmask to "A.B.C.D". Will only apply when a static (non 0.0.0.0) IP address is set.
SETGW A.B.C.D	Set the Gateway to "A.B.C.D". Will only apply when a static (non 0.0.0.0) IP address is set.
SETPDNS A.B.C.D	Set the Primary DNS address to "A.B.C.D". Will only apply when a static (non 0.0.0.0) IP address is set.
SETSDNS A.B.C.D	Set the Secondary DNS address to "A.B.C.D". Will only apply when a static (non 0.0.0.0) IP address is set.

After the IP configurations have been completed, the Serial port may be disconnected from the unit and the Faceplate replaced onto the cabinet. Further configurations may be required in Oasis central software to send communications out via Ethernet connection. Please refer to Oasis documentation for this configuration.

General Specifications:

Wall Mount Cabinet Dimensions:
*   10.75"W x 9.75"H x 3.25"D

Temperature Range:
*   Operating: +14°F to +140°F (--10°C to +60°C)
*   Storage: --22°F to +149°F (--30°C to +65°C)

Power Specifications:
*   Internal Transformer, Class 2, UL Listed, CSA Certified
    *   Input: 120 VAC ±10%, 50/60 Hz
    *   Output: 24 VAC ±10%, 50/60 Hz
*   Total Maximum Load: 1.5 A @ 24 VAC

FCC Compliance

This equipment generates and uses radio frequency energy and if not installed and used properly, that is, in strict accordance with the manufacturer's instructions, may cause interference to radio and television reception. It has been type tested and found to comply with the limits for a FCC Class B computing device in accordance with the specifications in Subpart J of Part 15 of the FCC Rules, which are designed to provide reasonable protection against such interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause 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 the receiving antenna.
• Relocate the Ethernet/Radio Repeater away from the receiver.
• Plug the Ethernet/Radio Repeater into a different outlet so the Repeater and receiver are on different branch circuits. If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions.
The user may find the following booklet prepared by the Federal Communications Commission helpful: "How to Identify and Resolve Radio--TV Interference Problems". This booklet is available from the U.S. Government Printing Office, Washington, DC 20402. Stock No. 004--000--00345--4.

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