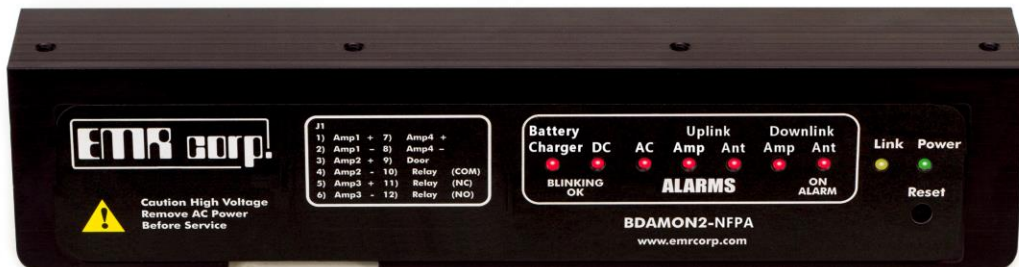




BDAMON02-NFPA72

Bi-Directional Power Amplifier Monitor



USERS MANUAL

Rev. 6

EMR CORPORATION

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Introduction

The EMR BDA Monitor (Model #BDAMON02-NFPA72) is a microprocessor-controlled unit capable of monitoring the Primary AC, Power Supply/Battery DC Voltage, and the DC Current for up to four RF amplifiers used in any EMR Signal Enhancement System. BDA monitoring features vary depending on the relevant hardware configuration. This documentation covers features and settings which are common to most users.



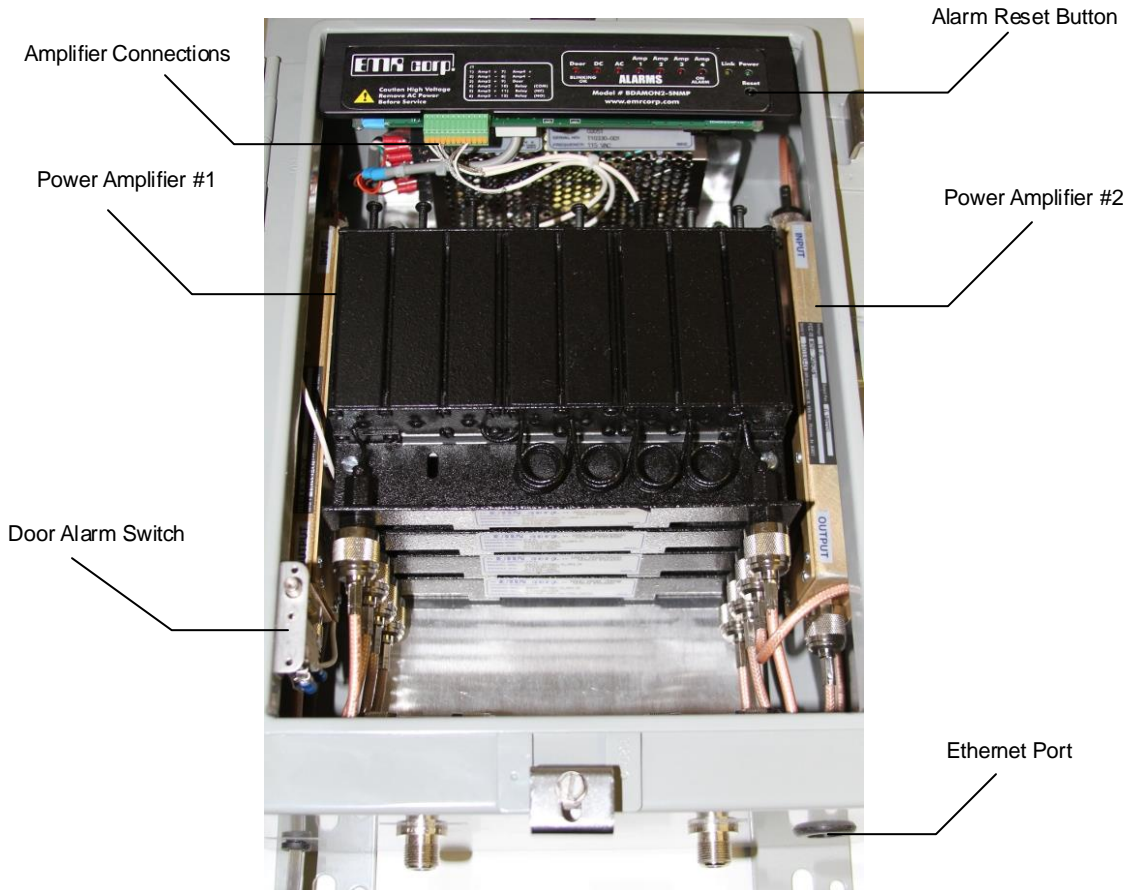
EMR Model # 850622 with BDAMON02-NFPA72

Product Features:

- Monitoring for up to four RF Power Amplifiers
- Web access
- Door Alarm
- AC Alarm
- Power Supply Alarm
- LED Status Indicators
- IP/DNS configuration
- Email Notification for up to five addresses
- SNMP Trap

Physical Connectivity

The BDAMON02-NFPA72 is available as a pre-installed component of an EMR Bi-Directional Amplifier (BDA) system. When the BDA system is plugged into a reliable power source the power indicators on the monitor unit will light/glow.



The door alarm switch triggers an audible and LED alarm as the door opens. The time of opening is recorded and a notification message sent to configured email/SNMP Trap. The alarm must be reset from the web interface or reset button on the front of the monitoring unit before the door is closed and the hysteresis period has lapsed.

Connect an ethernet cable to the ethernet port located at the base of the BDA enclosure. The ethernet cable travels through the port at the base of the BDA enclosure and connects to the monitoring unit.

Web Interface Access

With the ethernet cable connected and network connection established, navigate to the default IP address to access the web interface. The BDAEMON02-NFPA72 is configured and controlled via web browser.

The default IP address to access the web interface is: <http://192.168.3.250>

Logging In

A user must be logged in to access the web interface. When prompted enter the username and password. The default login username is “admin” with the password “admin” (see page 8, “Password Reset”, to change this setting).

Viewing Current Readings and Alarms

The home page provides a snapshot of all current readouts and alarm statuses.

The screenshot shows the BDA Monitor web interface in a browser window. The page title is "BDA Monitor" and the URL is "http://192.168.3.250". The interface includes a navigation menu on the left with options: Home, Alarm Setup, IP Setup, Misc. Setup, and a "Clear Alarm(s)" button. The main content area displays "Readings & Alarm Status" with a table of data. The table has five columns: Name, Reading, Alarm, Reading at Alarm, and Time/Date of Alarm. The data rows are: Door (Open, Off, *****), Power Supply (13.8 Vdc, Off, *****), Amp #1 (0.00 Amps, Off, *****), Amp #2 (0.00 Amps, Off, *****), Amp #3 (0.00 Amps, Off, *****), Amp #4 (0.00 Amps, Off, *****), and AC (Off, Off, *****). Below the table, it states "Readings are updated approximately every 5 to 10 seconds." The footer includes "EMR Corporation" and "www.emr.com".

Name	Reading	Alarm	Reading at Alarm	Time/Date of Alarm
Door	Open	Off	*****	*****
Power Supply	13.8 Vdc	Off	*****	*****
Amp #1	0.00 Amps	Off	*****	*****
Amp #2	0.00 Amps	Off	*****	*****
Amp #3	0.00 Amps	Off	*****	*****
Amp #4	0.00 Amps	Off	*****	*****
AC	Off	Off	*****	*****

The home page will refresh automatically approximately every 10-15 seconds.

Select “Clear Alarm(s)” button to reset the alarm statuses (must be logged in). The reset button on the front of the unit also resets the alarm statuses.

Alarm Setup

The Alarm Setup page allows configuration of alarms for all available amplifier and power values. This section also determines which alarms and readings appear on the home page.

Input #	Type	Name	Alarm	High Alarm	Low Alarm	Hysteresis	SNMP Trap	Email
1	TTL	Door	<input type="radio"/> Y <input checked="" type="radio"/> N	Open	N/A	5	<input type="radio"/> Y <input checked="" type="radio"/> N	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5
2	Vdc	Power Supply	<input type="radio"/> Y <input checked="" type="radio"/> N	14.40 Vdc	13.80 Vdc	5	<input type="radio"/> Y <input checked="" type="radio"/> N	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5
3	TTL	AC	<input type="radio"/> Y <input checked="" type="radio"/> N	Off	N/A	5	<input type="radio"/> Y <input checked="" type="radio"/> N	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5
4	Amps	Amp #1	<input type="radio"/> Y <input checked="" type="radio"/> N	2.20 Amps	0.15 Amps	5	<input type="radio"/> Y <input checked="" type="radio"/> N	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5
5	Amps	Amp #2	<input type="radio"/> Y <input checked="" type="radio"/> N	2.20 Amps	0.15 Amps	5	<input type="radio"/> Y <input checked="" type="radio"/> N	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5
6	Amps	Amp #3	<input type="radio"/> Y <input checked="" type="radio"/> N	2.20 Amps	0.15 Amps	5	<input type="radio"/> Y <input checked="" type="radio"/> N	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5
6	Amps	Amp #4	<input type="radio"/> Y <input checked="" type="radio"/> N	2.20 Amps	0.15 Amps	5	<input type="radio"/> Y <input checked="" type="radio"/> N	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5

Audible Alarm

Submit Reset

Configurable Alarms:

- Door
- Power Supply
- AC
- Amplifiers – Up to 4

Note: Amplifier High/Low limit settings are preconfigured for the system. Consult the manufacturer first before adjusting these settings!

Resetting Alarms:

Alarms can be reset via the web page or the Reset button on the front panel of the monitoring unit. The reset procedure will clear active alarms.

The “Hysteresis” field determines how long a failed condition persists before the alarm is tripped.

IP Setup Menu

The IP Setup menu allows configuration of network settings including IP, DNS, Email and Date & Time settings.

Network Connection Details

This section provides a readout of all basic Network Connection settings.

Network Connection Details	
Address Type	Manually Configured
IP Address	192.168.3.250
Subnet Mask	255.255.255.0
Gateway	192.168.3.1
DNS Server #1	192.168.100.200
DNS Server #2	192.168.100.201

DHCP Server Setup

DHCP is disabled by default and the interface is accessible via the default IP (192.168.3.250). DHCP must be disabled first in order to input a static IP address.

DHCP Server Setup	
DHCP Server	<input type="radio"/> Enable <input checked="" type="radio"/> Disable
<input type="button" value="Save Changes"/>	

Static IP Address Setup

Static settings are configurable here once DHCP has been disabled. **CAUTION:** Inputting incorrect static IP settings will make the web page inaccessible requiring a factory reset to regain access the webpage (see Factory Reset, page 8).

Static IP Address Setup	
Static IP Address	192 . 168 . 3 . 250
Subnet Mask	255 . 255 . 255 . 0
Default Gateway	192 . 168 . 3 . 1
<input type="button" value="Save Changes"/>	

DNS Server Setup

Auto DNS is disabled in default settings. To enable, select “Enable” option and click “Save Changes”.

The screenshot shows a window titled "DNS Server Setup". At the top, there is a checkbox labeled "Obtain DNS Server Automatically". To its right are two radio buttons: "Enable" (which is unselected) and "Disable" (which is selected). Below these controls is a "Save Changes" button.

Static DNS Server Setup

To setup a Static DNS Server, first disable the automatic DNS Server option, click “Save Changes”, input desired Static DNS settings and click “Save Changes” again.

The screenshot shows a window titled "Static DNS Server Setup". It contains two rows of input fields. The first row is labeled "Preferred DNS Server" and contains the IP address "192 . 168 . 100 . 200". The second row is labeled "Alternate DNS Server" and contains the IP address "192 . 168 . 100 . 201". Below the input fields is a "Save Changes" button.

Email Setup

The BDA Monitor can send alarm messages to up to 5 separate configured email addresses. Email alarm recipients are selectable on the Alarm Setup page.

The screenshot shows a window titled "Email Setup". It contains several input fields: "From Email Address", "Email Server", "Email Username", "Email Password", and five "To Email Address" fields labeled #1 through #5. Below the input fields are two buttons: "Save Changes" and "Test Email". At the bottom of the window, there is a status message: "Last Email Message was successfully sent at 15:25:15 05/20/2011 GMT."

Date & Time

The BDAMON02-NFPA72 is configured to automatically synchronize with NIST internet time servers. Select the "Time Zone GMT" differential specific to the time zone of your location.

Date & Time Setup				
GMT Time Local Time hh:mm:ss	GMT Date Local Date mm/dd/yyyy	Sync with NIST	Primary Server Secondary Server	Time Zone GMT (+/- hr)
19:52:51 12:52:51	05/20/2011 05/20/2011	<input checked="" type="checkbox"/> Enable 13 Port Sync every ▾	time.nist.gov 132.163.4.102	<input type="radio"/> + <input checked="" type="radio"/> - 8 ▾
Time was successfully synchronized with the Primary Server at 19:45:00 05/20/2011 GMT. DST in Effect. Server is healthy.				
<input type="button" value="Submit"/> <input type="button" value="Reset"/>				

Misc. Setup

Misc. Setup (miscellaneous settings) contains unit settings including Unit Name, Home Page Refresh Rate, SNMP Trap and Password Reset.

Setting Unit Name(s)

Each amplifier has its own default unit name which can be changed to any preferred unit name. The input unit name displays on the home page and appears in email alarm messages and SNMP Traps.

Unit Name	
Unit Name	BDA at the Hyatt 1st st
<input type="button" value="Submit"/> <input type="button" value="Reset"/>	
Reset to Factory Settings	
<input type="button" value="Reset to Factory Settings"/>	
Caution this will reset the IP Address to 192.168.3.250.	

Password Reset

The default username and password for the unit is “admin”. To change, insert your desired username/password and click “Submit”.

Password		
Privileges	User Name	User Password
Read/Write	admin

Submit Reset

SNMP Trap Setup

SNMP Traps provide a convenient method to monitor unit notifications through an SNMP client. Insert desired SNMP settings here and click “Submit”. Click “Send SNMP Test” to verify connectivity after desired settings are submitted.

SNMP Trap Setup	
SNMP Manager IP Address	192 . 168 . 100 . 82
Trap Minimum Interval	1
Trap Maximum Interval	16
Trap Maximum Messages	6

Submit Reset

Send Test SNMP Trap

Obtaining the MIB File

The MIB file for SNMP Trap is provided, and additional information on SNMP setup is available for download from the EMR website at: <http://emrcorp.com/downloads/BDAMON/>

Factory Reset

To reset the unit to factory default settings, remove power from the unit, press and hold the Reset button on the front of the unit while reapplying power to the unit. Continue to hold the Reset button until the unit beeps multiple times.

CAUTION: This clears all user defined settings made to the unit!

APPENDIX

A.1 Battery Backup Upgrade Installation:

This application note describes the installation of the Battery Backup Unit (BBU) to an EMR Bi-Directional Amplifier (BDA) system.

The BDA system must be mounted and installed. AC Power (if equipped) to the BDA and the Battery Backup Unit (BBU) must be disconnected in order to install backup battery.

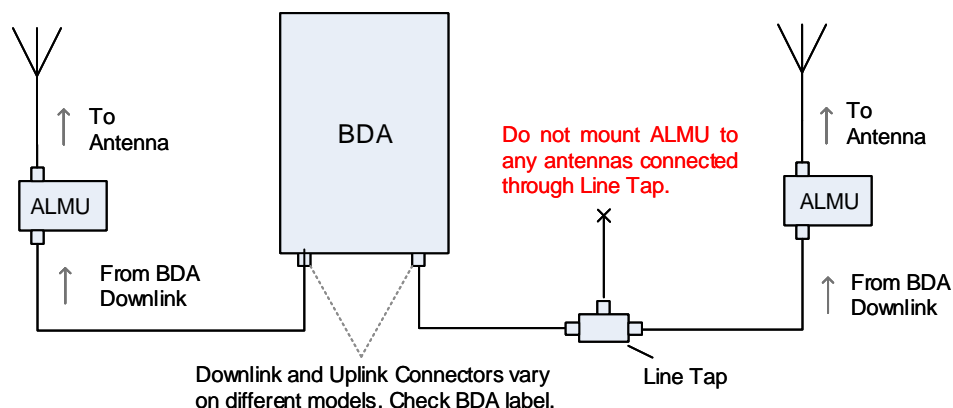
Open the BBU and attach the Red Positive wire to the battery. Also verify a secure connection between the Black Negative wire to the battery terminal. Mount the BBU unit with proximity to the BDA to allow the Battery Backup Cable to span the units.

Apply AC Power (if equipped) first to the BDA then to the BBU. Connect the Battery Backup Cable between the BDA and the BBU and tighten the connector screws. If any alarm LEDs light, press the Reset Button on the front of the monitor panel. Monitor the alarm panel to ensure that the DC Alarm have not been tripped.

A.2 Antenna/Line Monitor Unit Installation

This application note describes the installation of the Antenna/Line Monitor Unit (ALMU) to an EMR Bi-Directional Amplifier (BDA). One ALMU is required for each antenna port of the BDA, therefore two ALMU are supplied. Each ALMU unit is marked for either the Uplink or Downlink antenna port of the BDA. It is assumed that the BDA unit is installed and if equipped with the battery backup option it is installed and operating as described in AN5214-A.

During the installation of the Downlink Antenna, install the ALMU unit marked for the Downlink Antenna between the Antenna and the Coax end (see illustration below). For the Uplink (DAS) install the ALMU unit marked for the Uplink to the last Antenna at the end of the Coax. Do not install to any Antenna connected to the DAS via a Line Tap



APPENDIX

A.3 Relay Output Port

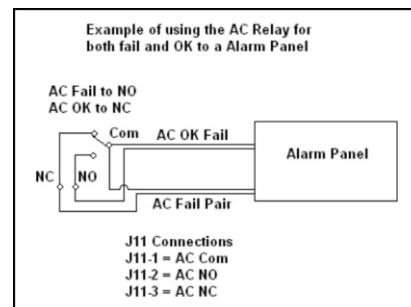
The Relay Output Port (J11) is a DB25 Male connector typically located on the bottom right panel of the BDA. A label of the pin-outs is also located inside of the door of the BDA. A DB25 Female connector (with hood hardware) is supplied with the unit for the Install Technician to connect to the Alarm Panel.

Note: Pin Numbers are written on the DB25 Connectors



There are 7 alarm relays available, these will supply contact closure (Supervisory Signal) to the fire alarm panel for the following alarm:

- (1) AC Power Failure
- (2) Signal Booster Failure
- (3) Battery Charger Failure
- (4) Low-battery capacity
- (5) Power Supply Failure
- (6) Antenna Malfunction
- (7) Signal Booster Trouble



Note: Signal Booster trouble (any alarm) closes on any alarm except the door alarm.

To facilitate the installation of the relay outputs of the bda monitor, a Relay Terminal Board is provided.

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SHEET 1 OF 1

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Installation Steps

- 1) If End of Line Resistors are used, install these at R1 to R7. If they are not used, install a wire jumper in R1 to R7.
- 2) Determine the relay output required. Normally Open (NO) or Normally Closed (NC) are available. The board is shipped with all relays set at NO. To change to NC remove the "0 Ohm" jumper from the appropriate "Relay Output Control" (see below) pads between A & B and reinstall between B & C
- 3) Install the alarm wires to J2 Terminal using the chart on the PCB for reference.
- 4) Secure wires to the board using small cable ties through the strain relief holes.
- 5) Plug the board to the BDA's Relay Outputport via J1.
- 6) Test for proper operation.

TOP

TOP

Bottom

Bottom

UNLESS OTHERWISE SPECIFIED - DO NOT SCALE DRAWING

ALL DIMENSIONS ARE IN INCHES * PERPENDICULAR SURFACES SQUARE WITHIN .005

TOTAL RUNOUT WITHIN .005 ON COMMON DIAMETERS * ALL MACHINED SURFACES $\sqrt{64}$ MAX.

REMOVE SHARP EDGES .010 MAX. * FILLET RADIUS .010 MAX.

TOLERANCE:

X.X = ± 0.1 X* = ± 1

X.XX = ± 0.01 XX* = ± 0.1

X.XXX = ± 0.005 XXX* = ± 0.05

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APPENDIX**A.3 Relay Output Port (Continued)**J11 Pin-Out:

- Pin 1 = AC Alarm Common
- Pin 2 = AC Alarm Normally Open
- Pin 3 = AC Alarm Normally Closed
- Pin 4 = Signal Booster Fail Alarm Common
- Pin 5 = Signal Booster Fail Alarm Normally Open
- Pin 6 = Signal Booster Fail Alarm Normally Closed
- Pin 7 = Battery Charger Fail Alarm Common
- Pin 8 = Battery Charger Fail Alarm Normally Open
- Pin 9 = Battery Charger Fail Alarm Normally Closed
- Pin 10 = Battery Fail Alarm Common
- Pin 11 = Battery Fail Alarm Normally Open
- Pin 12 = Battery Fail Alarm Normally Closed
- Pin 13 = Spare
- Pin 14 = Power Supply Alarm Common
- Pin 15 = Power Supply Alarm Normally Open
- Pin 16 = Power Supply Alarm Normally Closed
- Pin 17 = Antenna Alarm Common
- Pin 18 = Antenna Alarm Normally Open
- Pin 19 = Antenna Alarm Normally Closed
- Pin 20 = 5 Vdc (.25 mA Max)
- Pin 21 = Signal Booster Trouble Alarm Common
- Pin 22 = Signal Booster Trouble Alarm Normally Open
- Pin 23 = Signal Booster Trouble Alarm Normally Closed
- Pin 24 = Spare
- Pin 25 = Ground



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