



BOO'S PARANORMAL

EAD Webserver Features and Settings Guide

Operator reference for firmware V1.5.31.10

This guide explains every user-facing feature and setting in the Boo's Paranormal Environmental Anomaly Detector webserver. It identifies each allowed value, explains how each control changes detection or operation, and distinguishes temporary Apply changes from settings saved to the SD card.

The most important event rule is that both conditions must be true: the EAI score must reach the effective threshold, and the configured number of sensor categories must be active. A low EAI threshold alone does not override the Required Categories setting.

Connection	Value
Wi-Fi network	BOOS_PARANORMAL_EAD
Wi-Fi password	12345678
Web address	http://192.168.3.1/
Status update rate	Approximately once per second

Prepared for field setup and operation

Quick Start

Connect a phone, tablet, or computer to the EAD Wi-Fi network and open the web address above. The browser automatically sends its current date and time to the EAD RTC when the page loads.

- Use Full EAD to monitor all sensors and change configuration.
- Choose Apply to test settings for the current powered session.
- Choose Save to apply the values and write them to EADSET.CFG on the SD card.
- Choose Reset to restore the last configuration captured from the SD card or last successful save.
- For a direct threshold test, set EAI Threshold to 10%, Required Categories to 1, and Adaptive EAI Threshold off.

How an EAD Event Is Triggered

The EAD calculates sensor-group scores and combines them into an Environmental Anomaly Index from 0 to 100. Each scoring group can contribute up to 20 points. An event begins only when the EAI and category requirements are both satisfied.

Condition	Requirement	Meaning
EAI score	At or above effective threshold	The combined anomaly strength is high enough.
Active categories	At or above Required Categories	Enough independent sensor groups have each scored at least 10 points.

Environment is one category and uses the strongest of temperature, humidity, pressure, or gas change. Motion and rotation are counted separately for the category requirement, but only the stronger of their two scores is added to EAI to reduce false inflation when the detector itself is handled. Static-field readings are displayed independently and are not included in the M7 EAI total.

Apply Save and Reset

Control	What it does	Survives restart
Apply	Validates and activates every displayed configuration value immediately. The touchscreen lists changed values for about two seconds while monitoring continues.	No
Save	Applies the values immediately, then writes them to EADSET.CFG after the web response is closed.	Yes, with a working SD card
Reset	Restores the last saved configuration snapshot. It does not restore factory defaults unless those were the last saved values.	Restores saved state

Complete Settings Reference

Values outside these limits are rejected. Sensitivity percentages use 100% as normal. Higher percentages make a channel react to smaller changes; lower percentages require larger changes.

Setting	Range	Step	Default	Effect
EAI threshold	10-100%	1%	60%	Sets the base combined EAI score needed for an event. Lower values trigger more easily. Adaptive mode may raise the effective threshold above this base.
Required categories	1-7	1	3	Sets how many sensor groups must each score at least 10 points. Lower values favor sensitivity; higher values demand agreement among more sensors.
Display refresh	250, 500, 1000 ms	Preset	500 ms	Controls physical touchscreen refresh speed. It does not change sensor sampling or web status polling.
SD log interval	500, 1000, 2000, 5000 ms	Preset	1000 ms	Controls the spacing between normal CSV sensor records while logging is active. Shorter intervals create more detailed and larger files.
Environment sensitivity	50-200%	5%	100%	Scales temperature, humidity, pressure, and gas thresholds together. The strongest environmental subscore becomes the environment score.
Magnetic sensitivity	50-200%	5%	100%	Changes how much magnetic-field deviation from baseline is needed to score.
Light sensitivity	50-200%	5%	100%	Changes how much percentage deviation from baseline illumination is needed to score.
Motion sensitivity	50-200%	5%	100%	Changes how much acceleration deviation from baseline is needed to score.
Rotation sensitivity	50-200%	5%	100%	Changes how much gyroscope deviation from baseline is needed to score.
Sound sensitivity	50-200%	5%	100%	Changes how much peak-to-peak sound activity above baseline is needed to score. Sound classification remains separate.
EMF sensitivity	25-200%	5%	100%	Multiplies detected EMF strength and therefore affects EMF level, K2 band, and EMF score.

Setting	Range	Step	Default	Effect
EMF level scale	50-200%	5%	100%	Additional multiplier for EMF level percentage. It provides broad display/score scaling independent of the baseline offset.
EMF baseline offset	-500 to +500 ADC	1 ADC	0	Offsets the working EMF baseline. Positive values raise the baseline and suppress small positive changes; negative values lower it and increase indicated change.

Switch Settings

Setting	State	Effect
Include EMF in EAI	On	Adds the EMF score to total EAI and permits EMF to count as an active category.
Include EMF in EAI	Off	EMF remains viewable, but its score is forced out of the M7 event calculation.
EMF range colors	On	Uses the five K2-style range colors for EMF presentation.
EMF range colors	Off	Disables range-color presentation without disabling EMF measurement.
Buzzer enabled after startup	On	The buzzer becomes enabled as the default operating state after startup or loading settings.
Buzzer enabled after startup	Off	The default operating state is muted. This setting does not change the sensor calculations.
Display temperature in F	On	The web page converts the Celsius sensor reading to Fahrenheit for display.
Display temperature in F	Off	The web page displays Celsius. Detection calculations remain based on Celsius change either way.
Adaptive EAI threshold	On	Raises the effective event threshold by 0-20 points as average background activity increases. It never lowers the threshold below the selected base.
Adaptive EAI threshold	Off	Makes the effective threshold equal the selected EAI threshold, useful for controlled testing and predictable fixed-threshold operation.

Sensitivity Behavior

For environment, magnetic, light, motion, rotation, and sound, the code multiplies each normal scoring threshold by 100 divided by the selected sensitivity. Therefore:

Sensitivity	Threshold multiplier	Operational result
50%	2.00 times normal	Least sensitive; changes must be twice as large.
100%	1.00 times normal	Normal programmed response.
150%	0.67 times normal	More sensitive; about two-thirds of the normal change is required.

Sensitivity	Threshold multiplier	Operational result
200%	0.50 times normal	Most sensitive; half the normal change is required.

Normal 100 Percent Scoring Thresholds

Measurement	Begins scoring	Full 20 points	Category
Temperature	0.4 C	2.0 C	Environment
Humidity	2% RH	10% RH	Environment
Pressure	0.35 hPa	2.0 hPa	Environment
Gas resistance	8% change	35% change	Environment
Magnetic field	3 microtesla	25 microtesla	Magnetic
Light	10% change	60% change	Light
Motion	0.15 m/s squared	2.0 m/s squared	Motion
Rotation	0.05 rad/s	1.0 rad/s	Rotation
Sound	20 ADC peak-to-peak counts	350 counts	Sound

Webserver Views

Full EAD Monitor

The primary dashboard shows the EAI, temperature, humidity, pressure, magnetic field, light, motion change, rotation change, sound classification and level, EMF voltage, and static-field stage. It also contains all configuration and SD logging controls.

EMF Meter

The five-level K2-style view shows five progressive color bands, measured EMF voltage, current level, strength label, level percentage, ADC change, and EMF score out of 20. The touchscreen control switches the physical display between Normal and K2 Style. All other monitoring and SD logging continue.

Level	Color	Strength label
0	Gray	Base
1	Green	Low
2	Green Yellow	Moderate
3	Yellow	High
4	Orange	Very High

Level	Color	Strength label
5	Red	Extreme

Static Field Meter

The eight-stage view shows the illuminated stage ladder, static voltage, strength label, level percentage, ADC change, and static score out of 20. Its touchscreen control switches the physical display between Normal and Static Detector. All other monitoring and SD logging continue.

Stage	Strength label
0	Base
1	Trace
2	Very Low
3	Low
4	Moderate
5	Elevated
6	High
7	Very High
8	Extreme

Common Status Information

The header reports connection state, firmware, overall system state, SD state, battery voltage, and battery percentage. The footer reports date, time, RTC status, event state, and confidence. The system state can report Monitoring, Anomaly Detected, Device Movement, Critical Battery, or Battery Low.

SD Logging Features

Logging controls are independent of the selected web view. Switching among Full EAD, EMF, and Static does not stop monitoring or logging.

Control	Input or range	Effect
Investigation location	Optional text, maximum 28 characters	Adds a sanitized location to new CSV filenames. Spaces and punctuation are converted or removed as required for a safe filename.
Start Logging	No numeric range	Creates the next available numbered CSV file and begins periodic records.
Stop Logging	No numeric range	Stops new CSV records without deleting existing files.
Delete Logs	Browser confirmation required	Stops logging and deletes EAD CSV log files from the SD card. This is destructive.

Without a location, files use BP-EAD_001.CSV through BP-EAD_999.CSV. With a location, files use BP-EAD_LOCATION_001.CSV through BP-EAD_LOCATION_999.CSV. The current filename is displayed on the page.

Recalibrate EMF

Recalibrate EMF starts a five-second EMF-only baseline calibration. Use it after relocating the EAD, changing the antenna arrangement, or when the displayed EMF baseline is no longer representative. This action does not recalibrate the other sensors.

Clock and Installable App Features

- When the page loads, the browser attempts to synchronize the EAD RTC using the phone or computer's local date and time.
- The page includes a web-app manifest and icons. On supported browsers, an Install App button appears so the interface can be added to the home screen.
- The last selected web view is stored by the browser and reopened on the next visit from that browser.
- Live status refreshes approximately every second. After three consecutive failures, the page reports EAD Connection Lost and Web Data Error.

Operational Examples

Controlled 10 Percent Trigger Test

Setting	Test value	Reason
EAI threshold	10%	Allows a low combined score to satisfy the EAI condition.
Required categories	1	Allows one scoring sensor group to satisfy the category condition.
Adaptive threshold	Off	Prevents background compensation from raising the effective threshold during the test.

Reducing False Triggers

- Raise Required Categories before making every individual sensor less sensitive.
- Enable Adaptive EAI Threshold in environments with persistent background activity.
- Lower the sensitivity percentage only for the channel causing unwanted scores.
- Increase a positive EMF baseline offset when small positive EMF changes are being over-reported; use small steps and recalibrate after major physical changes.

Increasing Responsiveness

- Lower EAI Threshold to reduce the combined score required.
- Lower Required Categories if events are being missed because too few sensor groups agree.
- Increase the sensitivity percentage for the specific channel that needs to respond to smaller changes.
- Disable Adaptive EAI Threshold when a fixed, predictable threshold is required.

Important Interpretation Notes

- A displayed EAI above the base threshold does not guarantee an event if Required Categories is not satisfied.
- With adaptive mode enabled, compare EAI with the effective threshold, which may be up to 20 points higher than the selected base threshold.
- Apply is temporary. Use Save when the configuration should return after power cycling.
- Temperature display units do not change the underlying detection calculation.
- Changing web views or physical touchscreen modes does not disable any sensors.