

YELLOWJACKET-DF

User Manual Version 1.3



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YELLOWJACKET DF USER MANUAL

Introduction

The YellowJacket DF is a portable hand-held 802.11 scanning device. This tool can scan multiple channels for 802.11b/g sources. It has a direction-finding (DF) mode for zeroing in on a particular device.

There is a built-in GPS for location information as well as a Micro-SD slot for storing log files and other pertinent information.

Unpacking

Your Yellowjacket-DF ships with the following items pictured below:

- (1) Yellowjacket-DF unit
- (1) power supply for charging
- (1) GPS antenna
- (1) direction finding antenna
- (1) direction finding antenna with mounting bracket
- (1) omni-directional antenna
- (1) Ethernet cable
- (1) USB (standard to mini)
- (1) SD card with USB adapter



Before You Get Started

Before using your Yellowjacket-DF, you might need to charge it fully. Be sure

to charge it fully while it is OFF. The small LED just above the touchscreen will turn green when it is completely charged. Do not turn on the unit while it is charging as it will generate unnecessary heat and trigger the unit's thermal protection shutoff. For extended use beyond the internal battery life, use an optional external battery pack.

Getting Started

To turn on the YellowJacket DF (YJDF), simply press the yellow button on the back of the display on the left.



HARD POWER BUTTON (use only if touch screen becomes unresponsive)

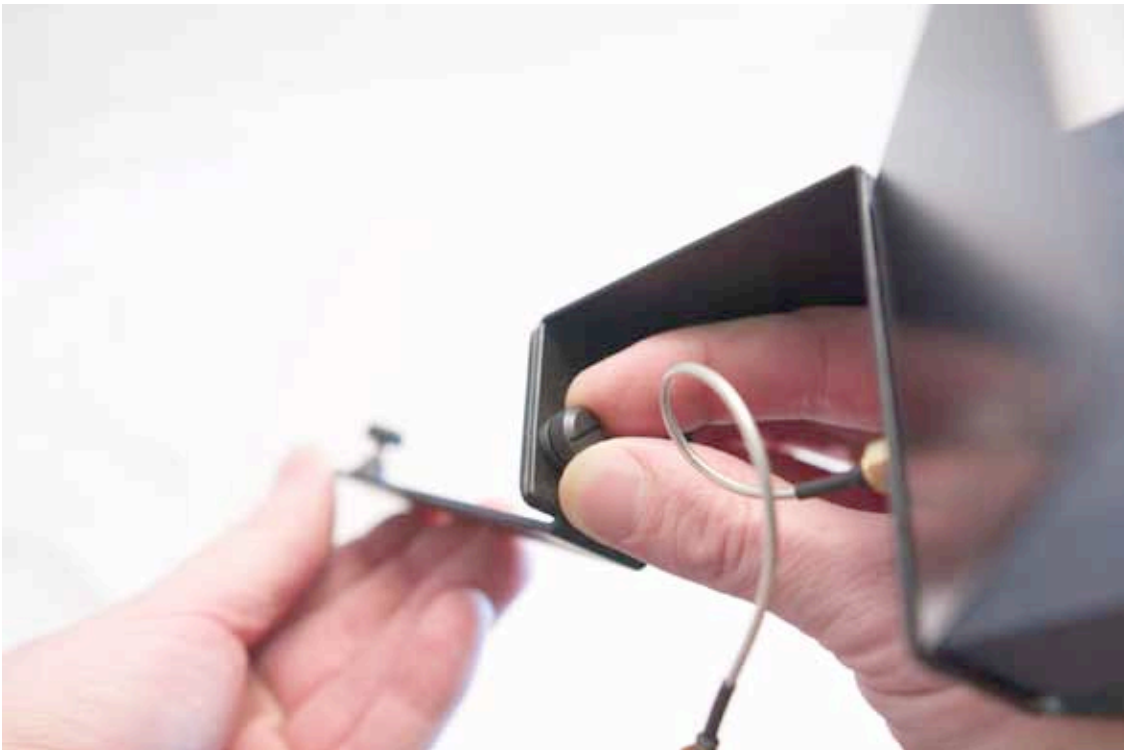
Attaching Antenna(s)

You will need to attach the included direction finding antenna in order to perform direction finding functionality with the unit. Simply slide the antenna plate into the mount on the rear of the unit and tighten the thumbscrew. Screw on the other end to the SMA connector on the top of the unit. Slide the beveled plate into the groove and align the screw hole with the screw. Use this paddle antenna when you are generally scanning the area for both 2.4 GHz and 5 GHz networks and devices.



ATTACHING OR REMOVING DIRECTIONAL PADDLE ANTENNA

Before you can attach either corner reflector direction finding antennas to the YJDF, you must first connect the antenna to a bracket extension. Simply align the screws with the holes and tighten both screws.



ATTACHING BRACKET TO DIRECTIONAL CORNER REFLECTOR ANTENNAS

Slide the beveled plate into the groove and align the screw hole with the screw. Tighten the screw.

Use the 2.4 GHz (larger corner reflector) antenna when you are specifically trying to locate 2.4 GHz networks or devices.

Use the 5 GHz (smaller corner reflector) antenna when you are specifically trying to locate 5 GHz networks or devices.



ATTACHING ANTENNAS TO UNIT

Physical Inputs & Outputs

When viewing YJDF from the bottom you will see the **battery power input**, a **mini USB port**, a **micro SD card slot** and **power charging input**.



BOTTOM VIEW

Be sure to note the orientation of the micro SD card when inserting it into the YJDF. It can only be inserted with the contacts facing up as shown.



INSERT MICRO SD CARD

When viewing the YJDF from the top, notice there are two SMA female connectors. The left connector in the middle of the top is for the **directional antenna input**. The connector to the right of that is for the **GPS antenna input**.



TOP VIEW

To turn off the unit correctly, SHUTDOWN is chosen from the main menu. In the event the unit cannot be shut down in this manner, holding down the rocker switch for 8 seconds will shut down the power.



Main Menu

The YJDF launches into the main menu. Simply pressing a button leads to the named option. The main menu consists of the following buttons:

Scan	Scan multiple channels for 802.11b/g traffic.
Channels	Modify the current scan channel list.
GPS	Position and timing information.
Probe	Sets active or passive scanning mode.
Auth MAC	Create or modify list of authorized MAC addresses.
UA MAC	Create or modify list of unauthorized MAC addresses.
Battery	Display current battery capacity remaining.
About	Version information.
Log	Log data to removable micro SD card
SHUTDOWN	Shuts down the unit normally (recommended)



STARTUP SCREEN

Upon startup, you will see a screen like this for approximately 10 seconds. Once the screen changes to the Main Menu, you will be able to begin using your YJDF.

Main Menu

From this menu you can access all of the YJDF sub-menus and features.



MAIN MENU

Scan Mode

Entering scan mode will immediately start the receiver scanning the currently chosen channel list. The channels being scanned scroll up on the right-hand side of the screen with the current channel being highlighted in the middle. The middle of the display show the MAC addresses of the devices found along with their SSID, channel number, and RSSI. This list is ordered by time of arrival. To scroll through the list, simply choose “Page Up” or “Page Down”.

To clear the entire list, press clear. To return to the main menu, press the “Main” button. To focus on a particular MAC address, click on the entry in the list. This will bring the user to “Direction Finding” mode.

Main	#	CH	MAC / SSID	RSSI	48
	1	4	00-40-33-AF-C3-FD Gator	-83	
Up	2	6	00-14-D1-C3-BD-5B TRENDnet637	-51	52
	3	1	00-1E-52-F4-FB-16 Scott's wireless backup net	-68	56
Down	4	11	34-BD-C8-04-C4-01 xfinitywifi	-72	60
	5	11	34-BD-C8-04-C4-03 CableWiFi	-72	
Clear	Page 1 of 2 , 9 items				64

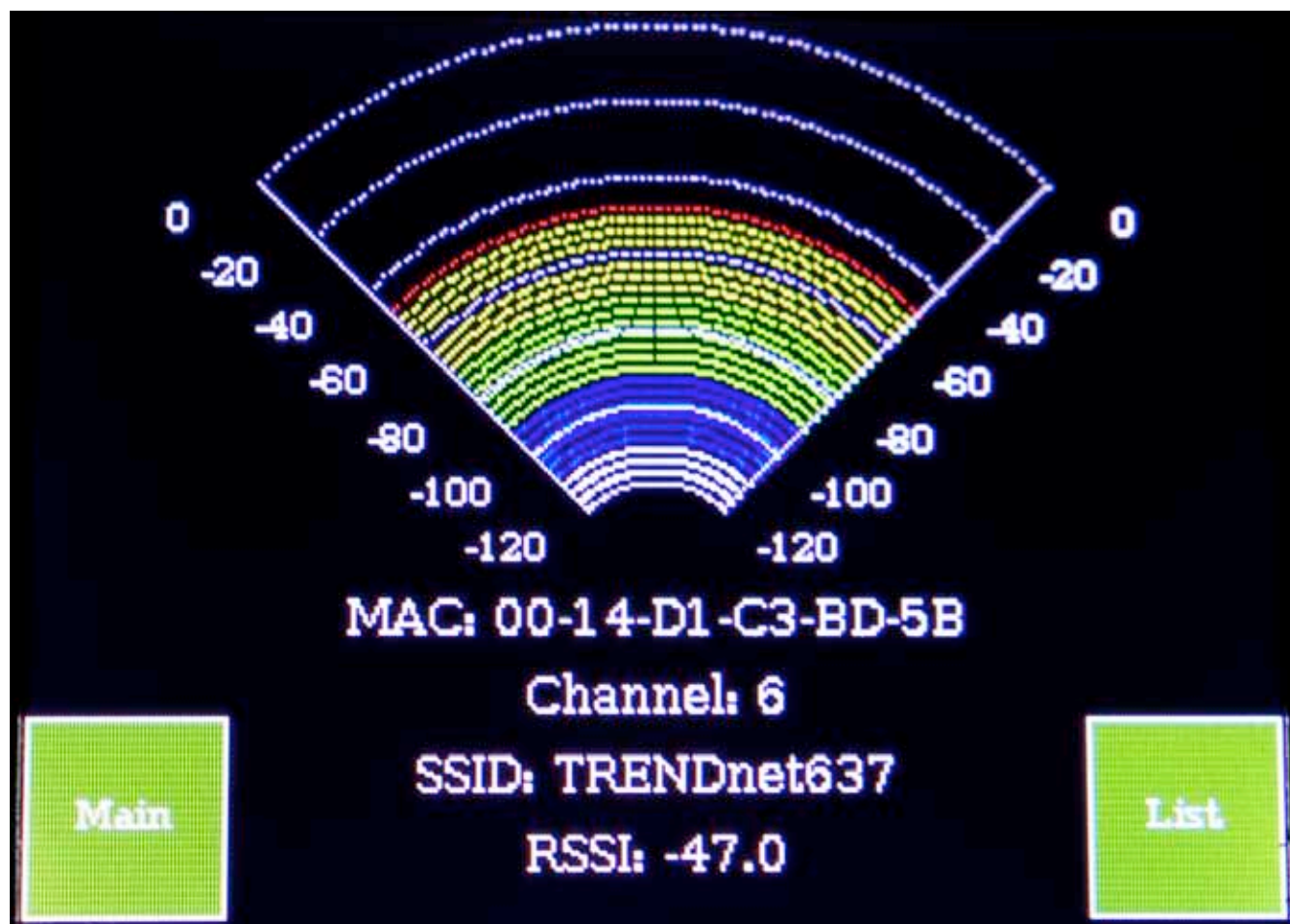
SCAN MODE

Direction Finding (DF) Mode

In direction finding mode, a single MAC address is tracked. If the “Probe” feature is turned on, the YellowJacket will send messages to the MAC address trying to elicit a response. If this feature is turned off, the YellowJacket will simply listen to any transmissions by this MAC address.

The MAC address, SSID, channel number, and RSSI are displayed. To zero in on the MAC address, use the direction finding antenna attachment and continue to watch for the strongest signal when pointing in different directions.

The user can return to the scan list by pressing “List”. To return to the main menu, press “Main”.



DIRECTION FINDING MODE

Channels

Choosing “Channels” from the main menu will pull up the current scan channel list. These channels represent 802.11bg assignments. Pressing the appropriate channel number will select/deselect that channel from the scan list.

The following channels are currently supported:

802.11bg – 1,2,3,4,5,6,7,8,9,10,11

802.11a – 36,40,44,48,52,56,60,64,149,153,157,161,165

There are also options to set or clear various channel blocks such as all 802.11bg and 802.11ah.

1	2	3	4	5	6
7	8	9	10	11	36
40	44	48	52	56	60
64	149	153	157	161	165

BG

No BG

AH

No AH

ALL

CLR

Done

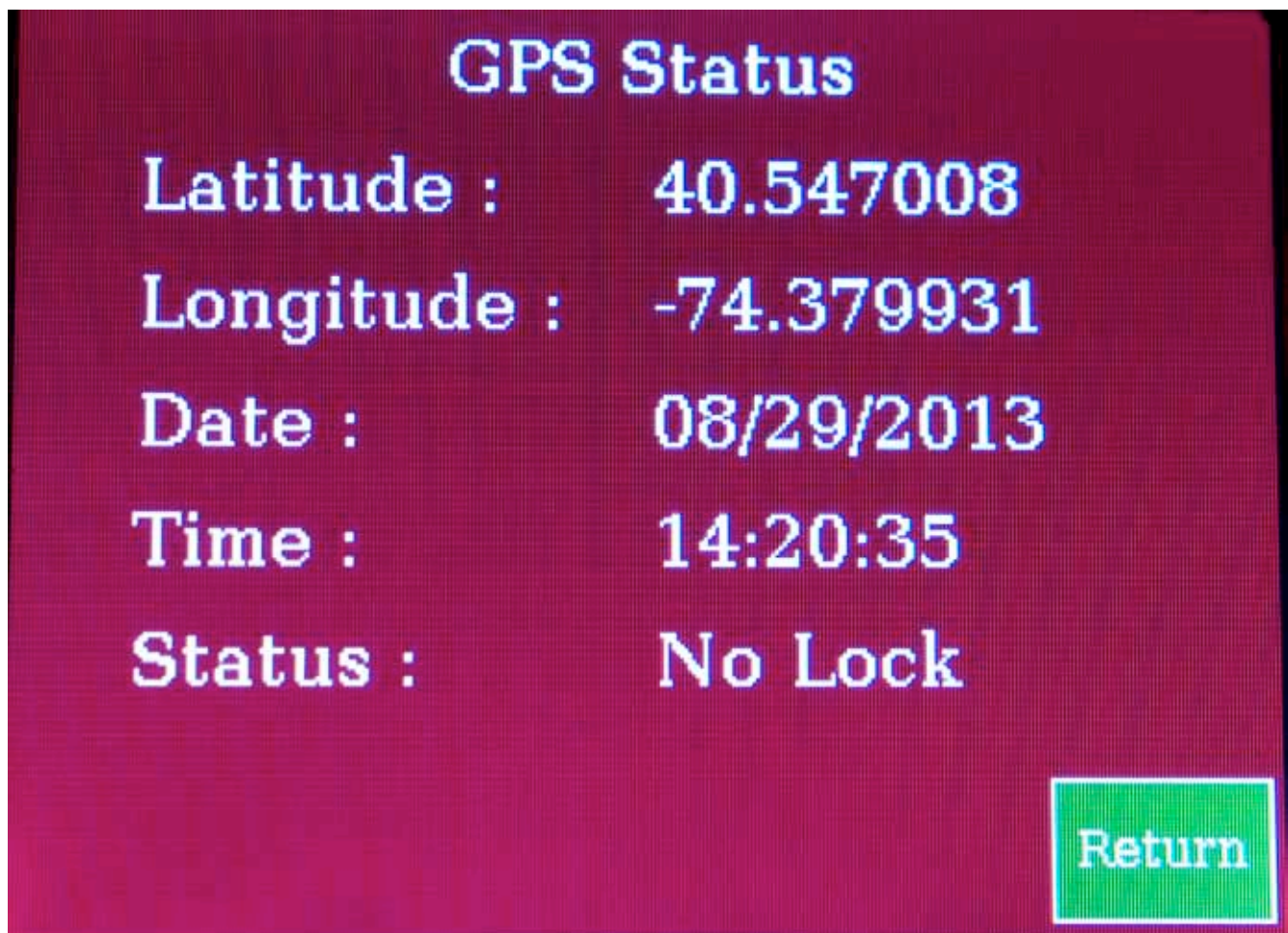
CHANNELS

GPS

The YJDF has a built-in GPS receiver to provide location and timing information.

The display shows Latitude, Longitude, Date, Time, and whether or not the receiver has GPS position lock. Also, if the position is locked the background of this screen will turn green.

If the GPS receiver has 2 dimension lock, the background will be yellow. The background will be red if there is no lock.



GPS

Active Searches

Typically, scanning various channels for devices is performed passively. In other words, the YellowJacket listens for signals on each channel. In this way, access points and clients can be found without adding any extra RF signals into the environment.

However, some clients will not appear often unless they are coaxed by a signal. By setting the active search feature, the YellowJacket will send direct messages to the selected MAC address, looking for a response.



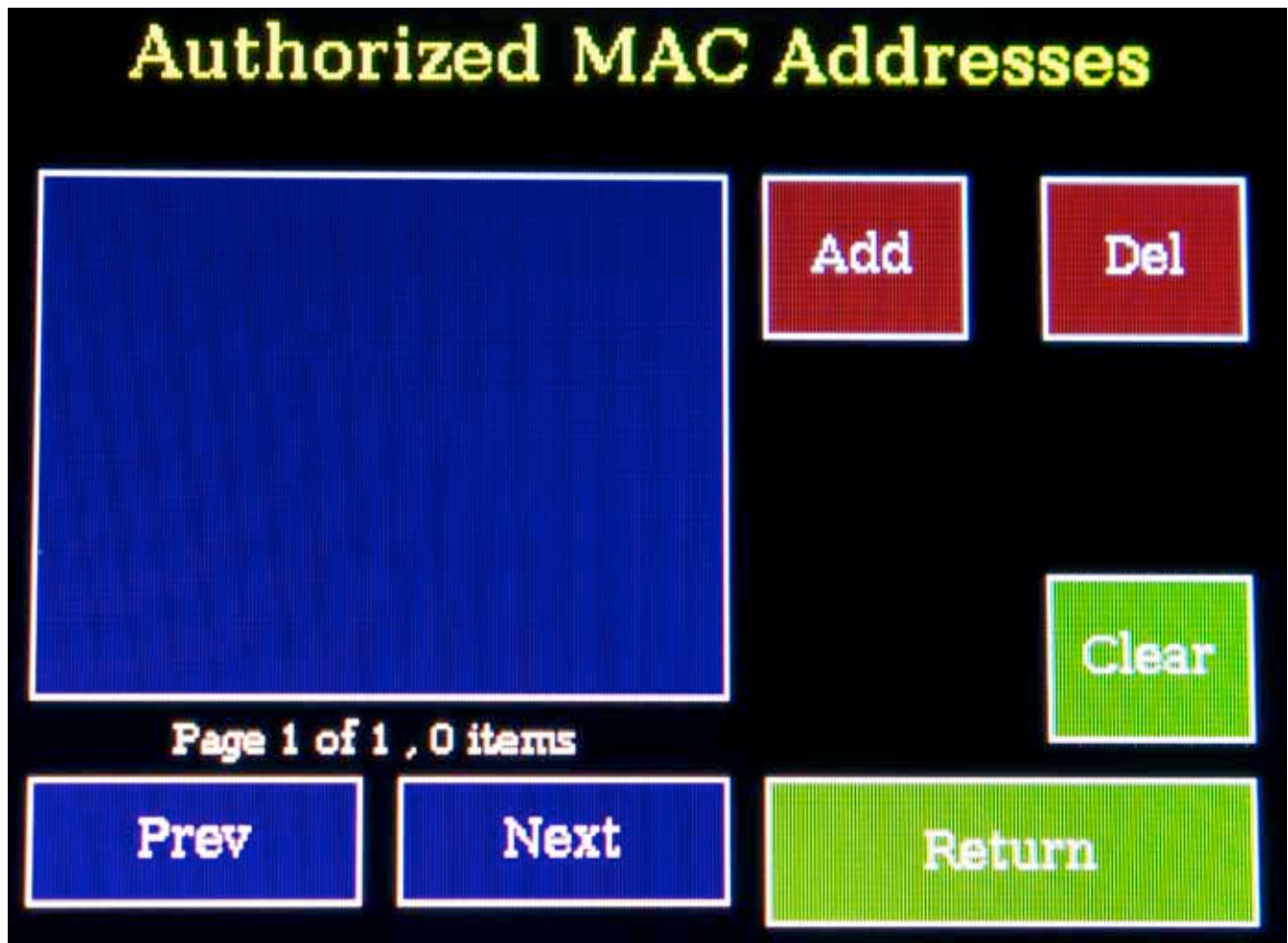
ACTIVE SEARCHES

Authorized MAC Addresses

The authorized MAC address display allows for the entry of MAC addresses which are authorized to transmit in the area to be covered.

A MAC address can be added to the list by choosing “Add”. Here an address can be entered for addition to the list. Pressing “Del”ete will remove the highlighted MAC address from the authorized list.

The list may be cleared by using the “Clear” button. The list may be navigated by using the “Prev”ious and “Next” buttons. To return to the main menu, press “return”.



AUTHORIZED MAC ADDRESSES

Unauthorized MAC Addresses

The unauthorized MAC address display allows for the entry of MAC addresses which are not authorized to transmit in the area to be covered, whether it is a unauthorized client trying to access a secure network or a rogue device causing interference.

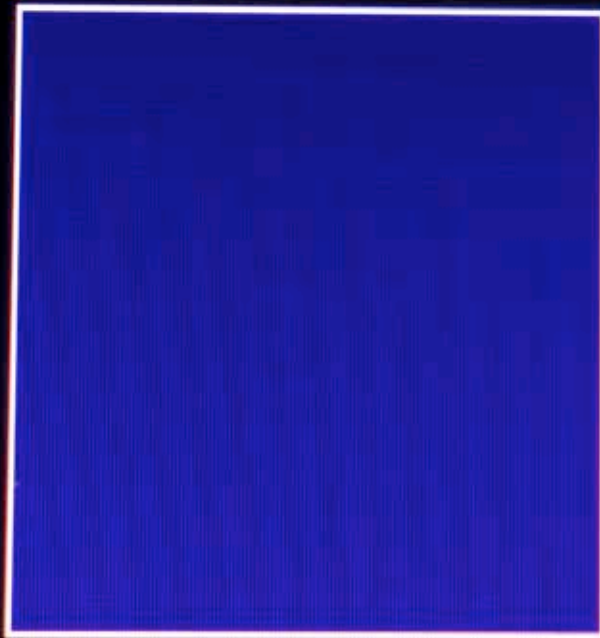
A MAC address can be added to the list by choosing “Add”. Here an address can be entered for addition to the list.

“Authorizing” a MAC address on this list will move the highlighted MAC address to the authorized MAC list. The user may also authorize all MAC addresses in the list.

Choosing “Generate List” will pull the most recent list of addresses seen in scan mode and place them in the unauthorized list. Any of these addresses which are valid may be moved from here to the authorized list.

The list may be navigated by using the “Prev”ious and “Next” buttons. To return to the main menu, press “return”.

Unauthorized MAC Addresses



Page 1 of 1 , 0 items

Prev

Next

Add

Authorize

Authorize All

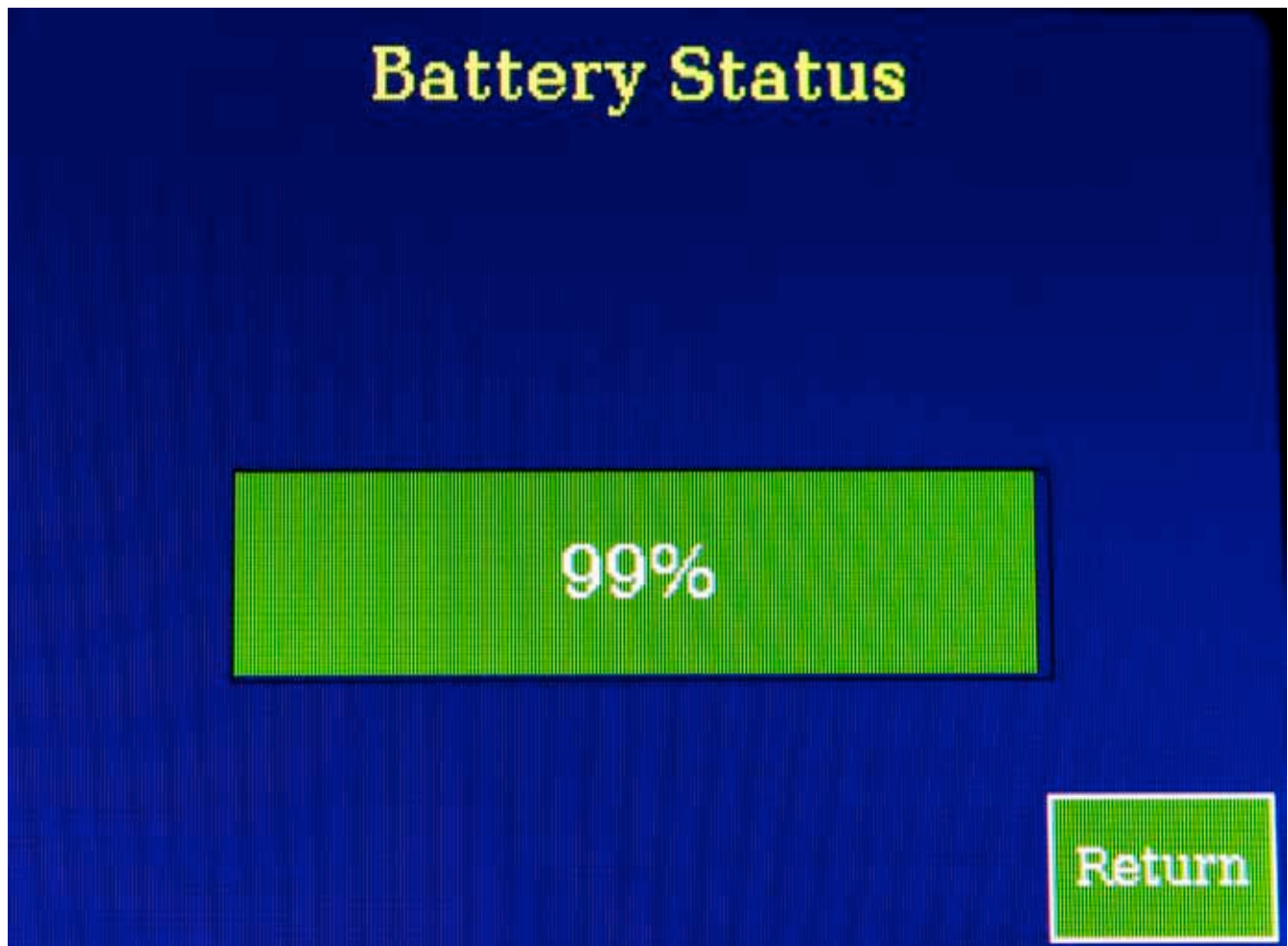
Generate List

Return

UNAUTHORIZED MAC ADDRESSES

Battery

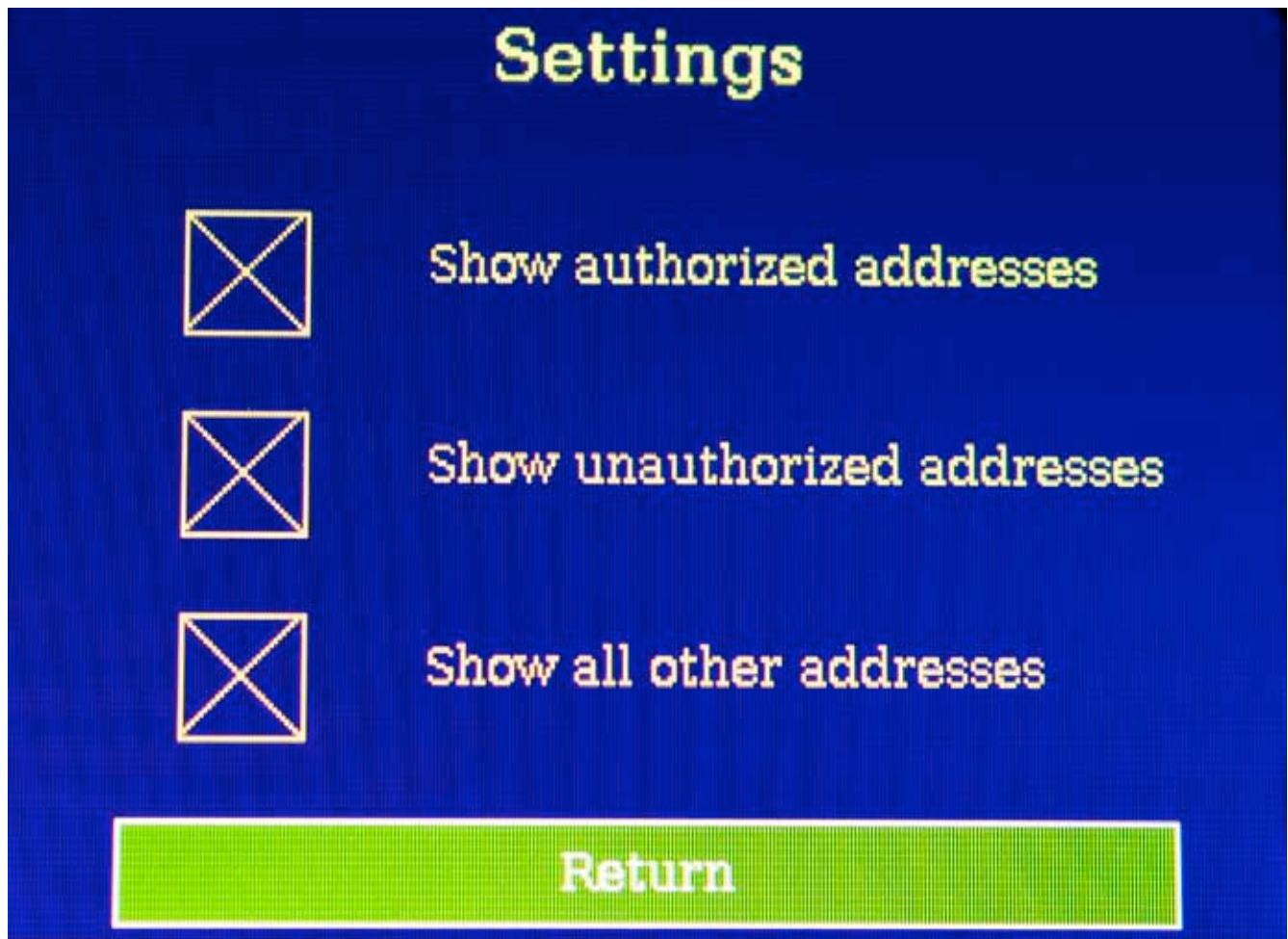
The battery display shows the percentage of battery life remaining. The battery recharges if the unit is plugged in. The YJDF's internal battery takes approximately 5 hours to charge from empty to full. Run time varies depending upon usage habits but generally lasts between 4-5 hours.



BATTERY

Settings

The settings display allow the user to decide which addresses should be shown in the scan list. There are three types of MAC addresses. Those which are authorized, those which are unauthorized, and those which have neither distinction.



SETTINGS

About

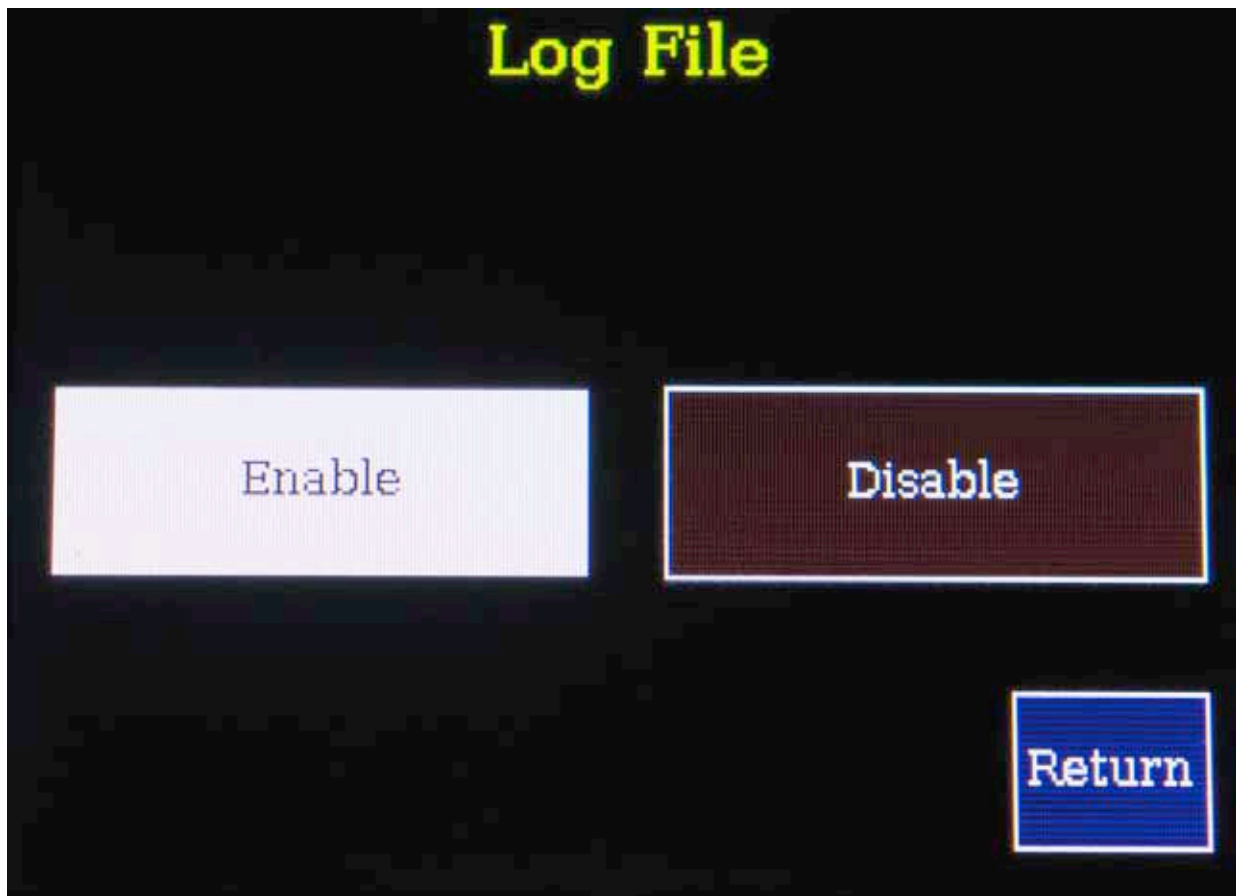
The “About” selection displays version information for the YellowJacket DF.



ABOUT

Log

The log screen enables or disables the logging function. Once you touch “Enable” the unit will begin to write data to the micro SD. If there is no micro SD card inserted into the YJDF, you will see the message “No SD card present”. Simply insert a micro SD card and the message will disappear.



Log File

Shutdown

The red “SHUTDOWN” button allows the unit to shut down in a logical manner, saving all necessary information.



SHUTDOWN